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U.S. Department of the Interior
Bureau of Land Management
Wyoming State Office

Rawlins Field Office July 2001

DECISION RECORD and FINDING OF NO SIGNIFICANT IMPACT for the Seminoe Road Coalbed Methane Pilot Project Carbon County, Wyoming

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2004-C12540/NF

MISSION STATEMENT

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/WY/PL-01/017+1310

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Rawlins Field Office
1300 North Third Street
Rawlins, Wyoming 82301-4376

1792
Seminoe Road CBM

JUL 23 2001

Dear Reader:

We are providing you a copy of the attached Decision Record for your information and use. The Decision Record identifies BLM's decision, explains the rationale for reaching the decision, and includes the proponents' committed measures and additional requirements for the Seminoe Road Coalbed Methane Pilot Project.

On April 26, 2001, the BLM released the *Environmental Assessment for the Seminoe Road Coalbed Methane Pilot Project, Carbon County, Wyoming*. The environmental assessment was prepared pursuant to the National Environmental Policy Act, other regulations, and statutes, to fully disclose the potential environmental impacts of the alternatives (Proposed Action and No Action alternatives) and to solicit public comment on them. The assessment also identifies additional mitigation measures to further mitigate potential impacts.

A copy of this decision has been sent to governmental entities, individuals, and organizations who commented on this project or have expressed an interest in mineral-related activities proposed on public lands. The BLM wishes to thank those individuals and organizations who provided input during this process. Your input has been essential in assuring issues important to you were fully considered.

If you have any questions regarding this decision please contact Brenda Vosika Neuman, Project Leader, at the address shown above or phone, (307) 328-4389.

Sincerely,

Mary Apple

ACTING
Field Manager

Enclosure

U.S. DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
RAWLINS FIELD OFFICE

DECISION RECORD
AND
FINDING OF NO SIGNIFICANT IMPACT

SEMINOE ROAD COALBED METHANE PILOT PROJECT

CARBON COUNTY, WYOMING

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U.S. DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
DECISION RECORD AND FINDING OF NO SIGNIFICANT IMPACT
SEMINOE ROAD COALBED METHANE PILOT PROJECT
CARBON COUNTY, WYOMING

INTRODUCTION

In April 2000, Dudley & Associates, LLC (Dudley), of Denver, Colorado, notified the Bureau of Land Management (BLM), Rawlins Field Office of their proposal to explore for and potentially develop coalbed methane resources located within the administrative boundary of the BLM's Rawlins Field Office. The pilot project is located in Townships 23 and 24 North, Range 85 West, Carbon County, Wyoming. The Seminoe Road Pilot Project Area (SRPPA) encompasses approximately 8,320 acres, 3,840 acres (46%) of which are federal surface and mineral estate. The pilot project consists of drilling, casing, completing, and producing 18 coalbed methane wells for evaluation and drilling one centrally located pressure monitoring well (19 total wells). Because legal access already exists, all 11 wells within the project area located on private lands have been drilled under the approval of the Wyoming Oil and Gas Commission. Two of the eight wells on federal lands have already been authorized and drilled.

ALTERNATIVES CONSIDERED

The *Environmental Assessment* (EA) *for the Seminoe Road Coalbed Methane Pilot Project* analyzed two alternatives. The Proposed Action considered coalbed methane activities to occur on federal lands. Under the Proposed Action, six wells would be drilled on federal lands administered by the BLM. Each well would be production tested continuously for a period of six to twelve months to evaluate the commercial feasibility of producing coalbed methane from coals in the Almond and Allen Ridge Formations of the Mesaverde Group. Field development of 19 wells would require the construction of a maximum of 10.0 miles of parallel road/gas and produced water pipeline/power line corridors. Approximately 3.0 miles of existing undeveloped road would be upgraded and 7.0 miles of new road would be built. The anticipated life-of-project would be from five to thirty years, depending upon the success of the pilot project.

Under the No Action Alternative BLM analyzed the impacts associated with the two approved federal wells and denial of any further development of federal lands associated with this project. This alternative provides a benchmark, enabling the decision-maker to compare the magnitude of environmental effects of the alternatives.

Several other alternatives were considered but rejected for various reasons. These alternatives included disposal of water produced during coalbed methane production by re-injection, increase the number of discharge points from three to four, discharge water into an evaporation pond, or consider changing the number and location of the wells.

DECISION

Based upon the analysis of the potential environmental impacts described in the *Seminoe Road Coalbed Methane Pilot Project* EA and, in consideration of the public, industry, and governmental agency comments received during the environmental analysis process, the BLM approves the Proposed Action as described in Chapter 2 of the EA and associated errata (see Appendix A) for the exploration of six coalbed methane wells and associated facilities within the SRPPA. The decision incorporates the Applicant-Committed

Environmental Practices and Protection Measures identified in Appendix C, as modified; BLM required mitigation identified in Appendix D; and measures identified in the U.S. Fish and Wildlife Service (Service) Conference Opinion included as Appendix E of this Decision Record.

APPROVED PROJECT COMPONENTS

The decision authorizes the initiation of permit approvals for the following project components on BLM-administered federal lands and/or minerals within the SRPPA, subject to the requirements identified in Appendices C, D, and E.

- Development of six coalbed methane wells located on federal lands within the SRPPA with an initial disturbance of 15.0 acres and a life-of-project disturbance of 6.0 acres.
- Construction of facilities associated with coalbed methane development including gas gathering pipelines, water discharge lines, and power lines parallel to road rights-of-way.
- To upgrade 3.0 miles of existing roads and build 7.0 miles of new road resulting in a total surface disturbance, including the development of associated facilities, of not more than 30.6 acres.
- Construction of water discharge facilities on 0.5 acres of federal land.

Approval of the Proposed Action is Conditional upon the Following:

- Implementation of the applicant-committed environmental practices and protection measures as described under Section 2.1.13 of the *Environmental Assessment for the Seminoe Road Coalbed Methane Pilot Project, Carbon County, Wyoming.*
- Adherence to the recommendations described in the U. S. Fish and Wildlife Service, Final Conference Opinion for the Seminoe Road Coalbed Methane Pilot Project, Carbon County, Wyoming, dated May 8, 2001.
- Implementation of the mitigation and monitoring measures described in Chapter 4.0 of the EA.
- Adherence to oil and gas lease and right-of-way grant stipulations and application for permit to drill conditions of approval

RATIONALE FOR THE DECISION

The decision to approve the operator's proposed development was based on the following factors:

1. Consistency with the land use and resource management plans
2. National Policy
3. Agency statutory requirements
4. Relevant resource and economic considerations
5. Application of measures to avoid or minimize environmental harm
6. Finding of no significant impact
7. Public comments

1. Consistency with Land Use and Resource Management Plans

The Proposed Action is in conformance with the overall planning direction for the area. The objective for oil and gas management decisions described in the Great Divide Resource Management Plan, 1990, is to "provide opportunity for leasing, exploration, and development of oil and gas while protecting other resource values." The project also meets the objectives of the Lands Program which is to, "support the goals and objectives of other resource programs for managing the BLM administered public lands and respond to public demand for land use authorizations."

2. National Policy

Private exploration and development of federal oil and gas leases is an integral part of the BLM oil and gas leasing program under the authority of the *Mineral Leasing Act of 1920* and the *Federal Land Policy and Management Act of 1976*. The United States continues to rely heavily on foreign energy sources. Oil and gas leasing is needed to encourage development of domestic oil and gas reserves to reduce the United States's dependence on foreign energy supplies. Therefore, the decision is consistent with national policy.

3. Agency Statutory Requirements

The decision is consistent with all federal, state, and county authorizing actions required to implement the Proposed Action. All pertinent statutory requirements applicable to this proposal were considered including informal consultation and formal conferencing with the U.S. Fish and Wildlife Service.

4. Relevant Resource and Economic Considerations

Environmental impacts from the pilot project to resources identified in the EA are minor and all deemed acceptable. The economic benefit is important due to the tax revenues generated from the development of natural gas.

5. Application of Measures to Avoid or Minimize Environmental Harm

Federal environmental protection laws such as the *Clean Air Act*, the *Clean Water Act*, and *the Historic Preservation Act* apply to all lands and are included as part of the standard oil and gas lease terms. The adoption of the mitigation and monitoring measures identified in Chapters 2.0 and 4.0 of the project EA and contained in this Decision Record in Appendix C, D and E, represent practicable means to avoid or minimize environmental impacts.

6. Finding of No Significant Impact

Based upon the review of the EA, the BLM has determined that the Proposed Action, with implementation of the protective measures identified in Appendices C, D and E, herein, would not cause a significant impact to the quality of the human, natural, and physical environment. Therefore an Environmental Impact Statement (EIS) is not necessary.

7. Public Comments

Thirteen comment letters were received on the EA during the thirty day comment period that ended June 1, 2001. The summarized comments and BLM's responses are found in Appendix B.

APPEAL

This decision is subject to appeal. Under BLM regulation, this decision is subject to administrative review in accordance with 43 CFR 3165. Any request for administrative review of this decision must include information required under 43 CFR 3165.3(b)(State Director Review), including all supporting documentation. Such a request must be filed in writing with the State Director, Bureau of Land Management, P.O. Box 1828, Cheyenne, WY 82003, within 20 business days of the date this Decision Record is received or considered to have been received.

Mary Apple
Field Manager
ACTING

7-12-01
Date

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APPENDIX A

ERRATA

MODIFICATIONS AND CORRECTIONS TO THE SEMINOE ROAD COALBED METHANE PILOT PROJECT ENVIRONMENTAL ASSESSMENT

APPENDIX A

ERRATA
MODIFICATIONS AND CORRECTIONS
TO THE
SEMINOE ROAD COALBED METHANE PILOT PROJECT
ENVIRONMENTAL ASSESSMENT

2.1.3.6 Road Construction/Transportation

Page 39, paragraph 4, change to read, "Normal channels of permitting through the Wyoming Department of Transportation (WYDOT) of oversize or overweight vehicles on State of Wyoming highways and federal interstate highways would be followed. The location of the project would require movement of loads through the Town of Sinclair and across Carbon County Road 351. Clearance for oversize or overweight loads or vehicles would be arranged with Carbon County Road and Bridge and the Town of Sinclair."

2.1.13.5 Vegetation/Noxious Weeds

Page 37, add new paragraph after paragraph 5, to state, "Dudley would monitor drainages where project waters are discharged for changes in vegetative communities."

2.1.13.11 Water Resources

Page 42, add new paragraph after paragraph 4 to read "Baseline wetland delineation/vegetation mapping will be conducted in drainages where water associated with coalbed methane production will be discharged. The investigation will include a routine on-site wetland delineation with the Army Corps of Engineers (COE), a detailed description including size, and photographic record of all encountered vegetative communities, with a report and map suitable for the COE and BLM. This effort will begin prior to discharge of any produced water into these drainages."

Section 2.1.13.14. Threatened, Endangered, Proposed, Candidate, and Sensitive Animal and Plant Species

Page 50, paragraph 1. Add the following after the last sentence, "Dudley will notify the Wyoming Game and Fish Department (WGFD) immediately upon finding any road kill within 0.25 mile of a known mountain plover concentration area, and request its removal by authorized personnel. In the instance that no appropriate personnel can be reached, Dudley agrees to cover the carcass until instructions for its removal are received from WGFD."

Page 50, add as item 14) Trash will be placed daily in closed bins and removed from the project site no less often than weekly.

3.1.1 Climate and Air Quality

Page 63, paragraph 3, line 9. Change this sentence to read, "Although the Savage Run Wilderness Area has not been designated Class I by Congress, it has the legal requirement to be managed as a Class I area through the Wyoming Air Quality Standards and Regulations.

Page 63, paragraph 3, lines 9 and 10. Revise this sentence to read, "Other Class I areas in the region include the Bridger Wilderness, Washakie, and Fitzpatrick Wilderness in Wyoming, and Mount Zirkel Wilderness in Colorado."

3.1.7.1 Surface Water

Page 74, paragraph 2. After the sentence ending "minimum of 3 cfs" add a new sentence stating, "North Platte River minimum flows have increased since dam construction and flow regulation. Minimum daily streamflows below Gray Reef dam are set by law to be greater than 330 cfs."

4.1.1 Air Quality

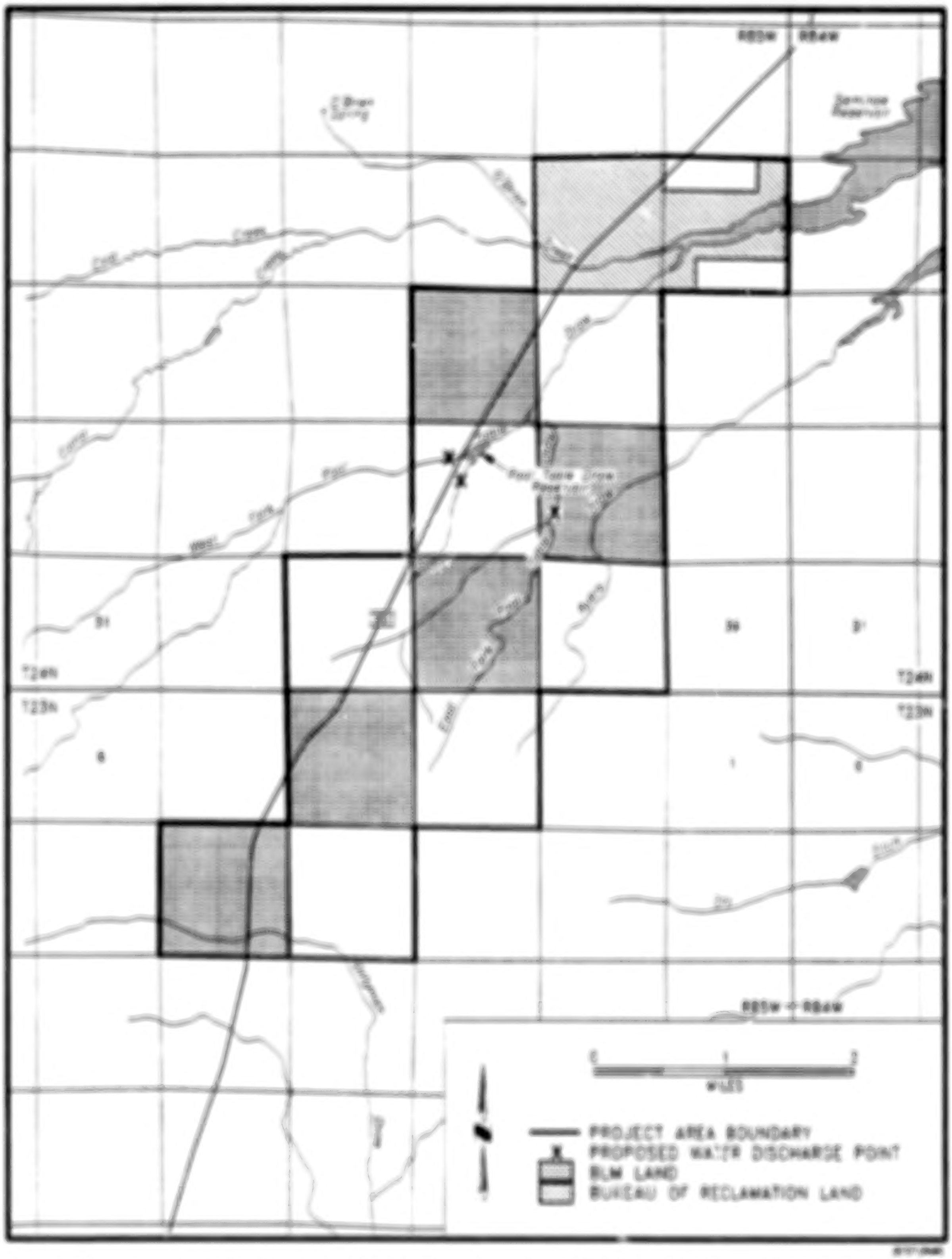
On page 105, paragraph 1, lines 5 and 6. Change the sentence to read, "...more refined approach (i.e., Calpuff dispersion modeling system). The studies found in the Pinedale EIS exceedences of the 0.5 dV threshold described to be within an acceptable range."

4.6 Visual Resources

Under Section 4.6.3, Mitigation, page 128, paragraph 2, line 2 remove the reference to directional drilling so that the sentence reads, "The BLM may require the relocation of project facilities to avoid potential visual resource impacts within the VRM Class II area, which may include the requirement to use centrally located processing facilities."

Map

Add Map 2.1a, Important Drainages Within the Seminoe Road Coalbed Methane Project Area.



Map 2.1a - Important Drainages within the Seminoe Road Coalbed Methane Pilot Project Area

APPENDIX B

SUMMARY OF EA COMMENTS AND BLM RESPONSES

APPENDIX B

SUMMARY OF EA COMMENTS AND BLM RESPONSES

The EA was released for a 30-day public review period on April 26, 2001. Fourteen comment letters were received on the EA. The letters have been reviewed to determine whether the information they provided would warrant a determination other than a Finding of No Significant Impact (FONSI). Substantive comments with responses are summarized below (in italics) with BLM responses to each immediately following the comment. The BLM would like to thank all commentors for taking time to review the EA and providing comments.

1. **Wyoming Department of Environmental Quality (WDEQ)**

   On page 63 of the EA the discussion of the management of the Savage Run Wilderness as a Class I wilderness is incorrect. Through Wyoming Air Quality Standards, the State Implementation Plan, and Wyoming Prevention of Significant Deterioration regulation, the Savage Run Wilderness Area is legally required to be managed as a Class I area.

   > The suggested change has been incorporated into the text of the EA. Please refer to Appendix A, Section 3.1.1.

2. **Wyoming Department of Transportation (WYDOT)**

   On page 39, third paragraph, it states that special arrangements would be made with WYDOT to transport oversize loads. I would assume that WYDOT's normal channel for the permitting of oversize or weight vehicles would be followed. The location of the project will require movement of loads through the Town of Sinclair and across Carbon County Road 351. Clearance for oversize loads would have to be arranged through Carbon County Road and Bridge and through the Town of Sinclair and not WYDOT.

   > The comment has been added to the text in Section 2.1.13.6. Please see Appendix A.

3. **United States Geological Survey (USGS)**

   a. *A map of the study area which shows all geographic locations discussed in the text needs to be included.*

      > A revised map of the area is included as Appendix A. Additional geographic information can be found on Figure 3, page 34, of the Water Management Plan of the EA.

   b. *A geologic map of the Seminoe Road Pilot Project Area (SRPPA) is needed here to show the aerial distribution of the geologic rock units.*

      > South of the Coal Creek drainage, the predominate surficial unit outcropping in the SRPPA is the Cretaceous Medicine Bow Formation (see page 65 of the EA). The Lewis Shale outcrops in the vicinity of Coal Creek Bay, but is north of the drainage.

   c. *The document states that the proposed project would not affect geology, therefore geology is not discussed further in this draft EA, may be erroneous. The geology of the Medicine Bow could influence the Sodium Adsorption Ratio (SAR) of the co-produced water. The shales of the formation, if containing mixed-layer montmorillonite (clays), could be reactive to high SAR.*

Technically, it is correct to state that the geology will not be affected by the proposed project (i.e., the surficial deposit will still be considered the Medicine Bow Formation). Since the water discharge will remain in the drainages, it may affect alluvium or soil developed from upslope or upstream geologic formations, but would not affect the geologic formation itself.

d. *Geologic assays of well cores will provide information of possible uranium roll front or pod formations in the project site. Halo elements associated with penetrated uranium deposits may also affect the SAR and should be cased.*

Applicant-committed measures found in the EA at Section 2.1.13.11, Water Resources, states, "BLM/WOGCC casing and cementing criteria would be adhered to in order to protect all subsurface mineral- and water-bearing zones."

e. *The only leasable minerals mentioned are the coal deposits of the Almond and Allen Ridge Formations. What about the coals of the Medicine Bow Formation? It is unclear whether the in-place resource (23.3 billion tons) mentioned in this section is the Almond, Allen Ridge, or Medicine Bow Formation.*

None of the target coals are considered economically-recoverable due to the depth of coals and none have been leased for mining. The figure for in-place coal resources considers all coals in the Hanna Basin.

f. *Glass and Roberts (1980) subdivided the Hanna Basin coalfield into four mining districts, two of which, the Corral Creek and Seminoe Mining districts are adjacent to the SRPPA. A description of the distinct leasable formations and estimation of the tonnages of each formation would be helpful here, especially the Almond and Allen Ridge Formations.*

The economically strippable coals of the Almond and Allen Ridge Formation occur several miles northwest of the project area in T. 24 N. R. 86 W.

The Great Divide Resource Management Plan (RMP), 1990, does not recognize any federal coal reserves west of Seminoe Reservoir as available for leasing. These reserves could not be leased at this time because they have not been identified in the Great Divide RMP as suitable for further coal leasing consideration. Under BLM's coal regulations found at 43 CFR 3420.1-4 it states that a lease sale cannot be held unless the "lands containing the coal deposits are included in a comprehensive land use plan or land use analysis." Should an interest be expressed in the development of the federal coal within the SRPPA, it could only be considered after an amendment to the Great Divide RMP, including an environmental analysis, was prepared and approved.

g. *A reference map is needed to show important drainages such as Pool Table and Ayers Draw.*

A revised map is included in Appendix A.

h. *There is an omission in this section of discussions of the impact of the SAR on the various soils in the SRPPA. Shales of the Medicine Bow are more reactive to high SAR due to their clayey composition than the sandy part of the Medicine Bow. The reactivity to the SAR of clayey shales, in turn, changes their permeability; thus, the ability of surface waters to infiltrate below the surface.*

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As discussed in the Seminoe Road Coalbed Methane Project EA Water Management Plan, all produced water will be piped from the wells to one of three discharge points. On page 23 of this plan, it states that the "receiving channels are hydraulically adequate for the proposed discharge volumes." Therefore, by design, no water discharged from the pilot project will flow outside of the drainages. Because there are no irrigation activities in the area, the elevated SAR in the discharge water would not cause significant impacts. The Wyoming Department of Environmental Quality concurred with this conclusion in the Statement of Basis prepared for the Seminoe Road Coalbed Methane Pilot Project's National Pollutant Discharge Elimination System (NPDES) permit (see Appendix C, page 2, paragraph 5).

i. *The water discharged along existing ephemeral drainages of Pool Table Draw will change the plant ecosystem from semiarid to wet and change the existing riparian plants and could provide the potential for the growth of invasive plant species. The ecosystem change of the ephemeral drainages and mitigation plan needs to be discussed.*

Again, this is discussed in the Water Management Plan on page 23. The Water Management Plan states that during project operations that, "...Pool Table Draw will flow continuously and the channel will remain flooded. The Pool Table Draw Reservoir would be full for the duration of the Project operations." The discussion goes on to state, "...continuous flows would result in vegetation changes from upland to wetland species." Dudley has committed to conduct baseline wetland delineation/vegetation mapping, including a description and investigation of the water discharge drainages. The investigation will include a routine on-site wetland delineation with the Army Corps of Engineers (COE), a detailed description including size, and photographic record of all encountered vegetation communities, with a report and map suitable for the COE and BLM. This effort will begin prior to discharge of any produced water into drainages. This discussion has been added to the applicant committed measures under section 2.1.13.11, Water Resource. Where project water is discharged, Dudley has committed to monitor surface drainages for changes in vegetation and condition of the drainage (see errata, Appendix A, under Section 2.1.13.5).

Disturbances to wetland/riparian areas would be subject to the applicant-committed measures found at 2.1.13.11, Appendix C, of this decision record, the Water Management Plan, and the Wyoming Department of Environmental Quality/Water Quality Division (WDEQ/WQD) NPDES permit. Any disturbance to wetland/riparian areas would be permitted by the COE.

4. Bureau of Reclamation

a. *Indicate the location of Pool Table Draw and Reservoir, and Ayers Draw.*

Please refer to the updated map in Appendix A.

b. *Indicate Bureau of Reclamation (Reclamation) surface and flowage easement lands that will be impacted by roads, power lines, and pipelines, including produced water discharge lines.*

No surface-disturbing activities related to coalbed methane development are planned during the Seminoe Road Pilot Project on Reclamation lands. The lands were included in the project area only because water produced from coalbed methane (CBM) will likely flow in drainages located on these lands.

c. *Identify the means by which water produced by the project will be conveyed across Reclamation lands in a manner to avoid erosion, deposition of salts, minerals, or deterioration of water quality, and potential to erode and transport sediment.*

The proponent has agreed to adhere to the applicant-committed measures included as part of the proposed action described in Chapter 2 of the EA, and can also be viewed in Appendix C of this decision record. The Applicant Committed Measures are segregated by resource under Section 2.1.13 of the document. Under Section 2.1.13.11, the proponent has made the commitment to adhere to the mitigation and monitoring measures described in the Water Management Plan (Appendix B of the Seminoe Reservoir Coalbed Methane Pilot Project EA). In addition, the discharge of all water would be in conformance with the WDEQ/WQD, BLM, and Wyoming Oil and Gas Conservation Commission (WOGCC) rules and regulations.

The proponent will be required to meet water quality standards set in their NPDES permit which is administered by WDEQ/WQD. The draft NPDES permit is included as Appendix C to the EA. Section A1 of the NPDES permit requires that, "All waters shall be discharged in such a manner to prevent erosion, scouring, or damage to stream banks, stream beds, ditches, or other waters of the state at the point of discharge. In addition, there should be no deposition of substances in quantities which could result in significant aesthetic degradation, or degradation of habitat for aquatic life, plant life, or wildlife; or which could adversely affect public water supplies or those intended for agricultural or industrial use."

Also see responses 3 h and i.

d. *Indicate potential impacts to Reclamation acquired minerals and confirm that the BLM oil and gas development with special stipulations (GP-135) and standard stipulations (Form 3109-1) on Reclamation lands continue to be applicable.*

As stated above, no development will occur on Reclamation lands during the life of this exploration project. The lands were included in the boundary of SRPPA in order to examine the impacts that may result from the flow of water produced from coalbed methane operations down the drainages located on Reclamation lands. Therefore the exploration project will have no affect on mineral resources located on Reclamation lands.

e. *Kortes and Pathfinder Reservoirs are located between Seminoe Dam and Alcova Reservoir on the North Platte River. The "Miracle Mile" section of the North Platte River is between Kortes Dam and Pathfinder Reservoir and is a Class I fishery. Public Law 92-146 directs the Secretary of Interior to maintain a minimum stream flow of 500 cubic feet per second in this reach of the river when flows are available. These dams and reservoirs should be addressed to provide a clearer understanding of the local setting along the North Platte River.*

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This project, as described in the EA, should have no affect on the ability to maintain the minimum stream flows of the North Platte River. Based on the project size we believe that the portion of the North Platte River which might be affected by this proposal is adequately described.

f. *The minimum flow of the North Platte River below Alcova Reservoir may have been historically 3 cfs, however, that does not reflect current conditions. Below Gray Reef Dam, the 40-year average annual minimum daily flow is 437 cfs and the Gray Reef authorization requires a flow of 330 cfs or greater be maintained.*

The Reclamation statement in the second paragraph is well taken. The statement found on page 74 of the EA that mean daily stream flows are variable within the range of 3 to 1,298 cfs is misleading. Changes have been made to the EA text at Section 3.1.7.1. Please refer to Appendix A under that section for the revision.

g. *According to the Water Management Plan the discharge water quality is not significantly different to the receiving water of Seminoe Reservoir. However, there are some differences. Please indicate what they are and address the contaminant load to Seminoe Reservoir. Mitigation for the containment load should be identified.*

A comparison of water quality between Seminoe Reservoir, the coalbed methane project test well, and other waters in or near the SRPPA, is shown on Table 7, page 16, of the Water Management Plan. Contaminant load of the discharged water is discussed on page 17 of the Water Management Plan.

Effluent requirements established for this project by WDEQ can be reviewed in the NPDES permit, Part I, Page 1. The discharge of water and the effluent limits that are established as part of the permit have been reviewed to ensure that the levels of water quality necessary to protect the designated uses of the receiving waters are maintained and protected.

h. *Please clarify the water monitoring location of Seminoe Reservoir at Seminoe Dam. Water quality would be different whether samples were collected above the dam or below the dam.*

The monitoring location proposed as the point of compliance for this project by the NPDES permit is in the SWSW, section 13, T. 24 N., R. 85 W., at the confluence of Pool Table Draw with Seminoe Reservoir.

5. United States Environmental Protection Agency (EPA)

a. *Please include any requirements identified in the Biological Assessment and the Biological Opinion to protect T&E species with the Decision Record.*

The conference opinion from the U.S. Fish and Wildlife Service (Service) is included as part of the Decision Record and is attachment to this document. Dudley & Associates have agreed to comply with the Final Conference Opinion (Appendix E). If there are any differences between the mitigation measures described in the EA and the opinion, the opinion will be the overriding measure.

b. *Additional information on predicting stream loading for metals would be helpful to understand the impact for Seminoe Reservoir and the North Platte River.*

Dudley & Associates have developed a plan, and secured contractors to perform water quality and quantity and bioaccumulation baseline monitoring in the SRPPA. The studies scheduled for Spring 2001 have been completed and the tasks included the collection of macroinvertebrates, fish tissue, and sediment samples. These studies were conducted to establish baseline biochemical data for water quality, quantity, sediments, and aquatic life forms which will provide defensible data on which to assess impacts to aquatic life.

6. Dudley & Associates, LLC

a. *In Chapter 4, Environmental Impacts, the significance criteria for each resource established in this chapter would be better presented as management guidelines. No significant impacts are anticipated, yet the significance criteria appears as the first piece of information under each resource section. This sets an unnecessary tone for the pilot project, as well as the subsequent resource impact and mitigation discussion.*

Significance criteria was presented first as a threshold against which to compare the impact analysis as well as a method of comparison for the decision-maker. The significance criteria was not intended to be a negative presentation.

b. *The document includes language stating that BLM may deny all proposed surface disturbance within 500 feet of perennial surface water and or wetland areas and/or within 100 feet of intermittent and ephemeral drainage channels. It is impractical for Dudley to avoid all these areas in all cases. Also, we are unaware of any other documents that use the mitigation language contained in the Chapter 4.*

The BLM realizes that some linear project components such roads and pipelines may not be able to avoid all of these surface water features. This language comes from the Great Divide RMP, Appendix I, Standard Mitigation Guidelines for Surface-Disturbing Activities. The purpose of these guidelines as stated in the RMP is to: (1) reserve for the BLM, the right to modify the operations of all surface and other human presence activities as part of the statutory requirements for environmental protection; and (2) inform a potential lessee, permittee, or operator of the requirements that must be met when using BLM-administered public lands. Specific criteria such as the 500 foot limit have been established based on the best information available. However, as stated in the RMP, the mitigation will be based on site-specific review during the Application for Permit to Drill, and an exception, waiver, or modification of these limitations may be approved in writing, including documented supporting analysis by the Authorized Officer.

c. *The BLM includes language which states that all roads will be required to be crowned, ditched and appropriately surfaced, however, in Chapter 2 Dudley has already committed to following the standards of BLM Manual 9113 and the Gold Book. Dudley believes that adherence to this guideline is sufficient to limit potential adverse effects from roads.*

Because of the size of the drill rigs needed to reach the target formation, all roads will be required to be crowned and ditched for this exploration project. Please note that the "Gold Book" is no longer the guidance used for the construction of roads. Instead, please refer to BLM Manual Section 9113, Road Standards, as the guidance for project road construction.

d. *At 4.1.6.3 and 4.2.4.3 the BLM requires that noise level increases be limited to no more than 10dBA above background levels at sage grouse leks. Dudley requests that the BLM adhere to the current 55 dBA limit until the Sage Grouse Cooperative Management Plan is complete.*

The information the BLM and Wyoming Game and Fish Department have on noise levels impacting sage grouse leks is speculative. The 10 dBA limit came from the recent Pinedale Anticline EIS. As stated on page 117of the EA, no known artive leks occur within the project area, and the closest leks occur about 1.5 miles from the SRPPA boundary. It is unlikely that the mitigation will be needed; however, the mitigation measure remains as part of the Decision Record to account for leks that may be identified in the future.

e. *The document states that impacts to fish in the North Platte River and Seminoe Reservoir are unknown. Please note that such impacts will be insignificant due to the relatively small volumes of produced water, treatment of produced water, the dilution effect of Seminoe Reservoir, and the regular water quality monitoring and reporting Dudley will perform.*

The reason for the statement is that metals tend to be persistent and can accumulate in ecosystems and food chains and the degree of persistence is not known. However, as stated on page 137 of the EA, bioaccumulation of metals in Seminoe Reservoir fish is not anticipated as a result of the Proposed Action due to the small volume of produced water which will be diluted upon discharge to Seminoe Reservoir. The baseline information already gathered by Dudley, continued monitoring of fish and other aquatic species (see page 118 of the EA), and adherence to the conditions of the NPDES permit should lead to informed conclusions.

f. *We question the need for the mitigation to avoid potential impacts to Visual Resources within the Class II area as described at 4.6.3 and 4.11.2.8.*

The need for mitigation in Class II areas is described in the Great Divide RMP and is included as a Surface Disturbance Stipulation on oil and gas leases located in Visual Resource Management (VRM) Class II areas. The stipulations states, "Surface disturbance will be prohibited in any of the following areas or conditions. Modifications to this limitation may be approved in writing by the authorized officer...(b) Within important scenic areas (Class I and II Visual Resource Management areas)."

The guidance provided with the stipulation states that when this condition exists, "...surface disturbing activities will be prohibited unless or until the permittee or his designated representative and the surface management agency arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation will occur prior to development and become a condition of approval when authorizing the action."

Dudley requests clarification on the basis of need and precedent for requiring the mitigation measures described as follows:

1) "...the relocation of project facilities to avoid potential visual resource impacts within VRM Class II area."

The project facilities that are to be located in the Class II VRM area must be located to comply with the Class II VRM Objective which states:

> The objective of this VRM class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

This would indicate that, in the VRM Class II portion of the project area, the facilities should be located in the least obtrusive portion of the 40 acre drilling window. This will be determined on a case-by-case basis during a field visit for each of the wells to be drilled in the Class II VRM area.

2) "...the directional drilling of wells and/or the use of centralized processing facilities."

The reference to directional drilling has been removed from these sections as a potential mitigation requirement.

3) "...power lines be buried in Class II areas or that overhead power lines and power line features be non-reflective, sandblasted and/or non-reflectively painted to a color that blends with the environment."

These are the standard mitigation measures available to the BLM for use in VRM Class II areas and are intended to make management activities not attract the attention of the casual observer (as stipulated in the Class II Objective above). If power lines can be hidden from the view of the Seminoe Road using topographical features, the same objective will have been met. Topographical features may be augmented using the topsoil piles (see point 5 below) to hide power lines. The BLM may require burial of all power lines in VRM Class II areas within the SRPPA.

4) "...painting of facilities using a custom-mixed paint rather than using a standard environmental color so that facilities do not attract attention in VRM Class II areas."

A Dudley representative volunteered to mix custom colors with our approval to make the facilities less visible in the Class II area. Our objective was to use a color that would have more green and blend in with the environment better than the standard Carlsbad Canyon, such as Ralph Lauren's Marsh Grass C018C, which can be purchased at Home Depot or matched at almost any paint store. The point is to meet the Class II VRM Objective by making the facilities not attract attention.

Facilities in the Class III area may be painted the standard Carlsbad Canyon. In order to buy only one color, it would be acceptable if all facilities were painted Marsh Grass C018C rather than Carlsbad Canyon.

5) "...in all areas...topsoil stockpiles be placed at locations to screen well pad and other facilities from Seminoe Road...."

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Topsoil is piled next to the facilities. The stipulation is that it be placed on the side of the facilities that will best screen the facilities from view from the casual observer on the Seminoe Road. Location of the topsoil pile will be approved on a case-by-case basis in the Class II area. This will not be required in the Class III area.

The Class II Objective establishes the basis and need for these stipulations. There is no precedent in the Rawlins Field Office Management Area because no one has requested this type, or any similar project in a Class II area. Future projects in other Class II areas may require similar mitigation measures. The number of wells is not relevant. The location in a Class II area is the factor in determining the requirement.

g. *Dudley & Associates concurs with the stated Reasonable and Prudent Measures of the Final Conference Opinion and will adopt them as components of the pilot project. However, if the Terms and Conditions become effective, Dudley requests that trash handling requirements be made consistent with those employed at state and federal parks in the region.*

Your request to have trash placed daily in closed bins and removed from the project site no less often than weekly has been discussed with U.S. Fish and Wildlife Service. The Service concurs with the proposed mitigation and wording has been changed (see Appendix A, Section 2.1.13.14, Threatened, Endangered, Proposed, Candidate, and Sensitive Animal and Plant Species).

h. *Because the language in section 4.2.5.3 is more general than the final conference opinion please note that Dudley requests that the Final Conference Opinion be the policy guideline to which all Pilot Project development actions are subject when Threatened and Endangered, Proposed, Candidate, and Sensitive Animal and Plant Species (T&E/PCS) species are found or likely to occur.*

The U.S. Fish and Wildlife Service Final Conference Opinion (Appendix E) will supercede all mitigation described in the EA, *if* in conflict. The opinion describes the manner in which all project activities affecting T&E species in the SRPPA will be conducted, with the exception noted in response "g" above.

7. Petroleum Association of Wyoming

a. *PAW would like to call attention to the mitigation measures imposed on the applicant for protection of the Mountain Plover. The status of the plover as "proposed for listing" allows for certain discretionary authority and should consider the effects on the oil and gas operator as part of reasonable and prudent measures necessary to minimize the impact on the Mountain Plover.*

During wildlife surveys of the area there were several mountain plover sitings. Mapping of potential habitat revealed that about 33% of the area within the SRPPA is suitable mountain plover breeding habitat. The Biological Assessment prepared for the project determined that the proposed action is likely to adversely affect the proposed mountain plover. The options were presented to the proponent and they chose to have BLM pursue formal conferencing with U.S. Fish and Wildlife Service. Dudley has agreed to formal conferencing as a way of avoiding potential project delays should the plover become listed.

b. *Page 118 of the EA states that the BLM may require that noise level increases be limited to no more than 10 dBA above background levels at sage grouse leks. There is no mitigation in the RMP regarding noise and its effect on sage grouse leks. There is an ongoing effort with BLM and the Wyoming Game and Fish Department to monitor the possible effects noise may have on the species during seasonal times of the year. PAW recommends that BLM remain flexible with noise mitigation while those studies are being conducted. The EA should comply with findings of the Sage Grouse Working Group.*

The RMP includes standard mitigation guidelines used to develop project-specific or site-specific mitigation measures designed to protect sensitive resources.

Because no findings are available from the Sage Grouse Working Group as we prepare this decision record, the mitigation presented in the EA will be implemented as necessary. See response 6d.

c. *PAW does not believe that directional drilling should be used as a mitigation measure as described on page 128 of the EA.*

The reference to directional drilling as a possible mitigation has been removed from the EA. See Appendix A.

8. **Terry Svalberg, U.S. Department of Agriculture, Bridger-Teton National Forest**

a. *Page 8 of the document states that the lessee's right to drill and develop somewhere on the leasehold cannot be denied conflicts with the statement on page 55 that Congress can completely deny a lessee the right to drill.*

The two paragraphs do appear to conflict. Below is a discussion of the difference in each situation.

The federal oil and gas lease is a contract between the mineral owner (federal government) and the operator(s). As stated on page 54 of the EA, the denial to develop a valid lease would violate the lessees' contractual rights. However, a lease does not convey an unlimited right to explore or an unlimited right to develop oil and gas resources. While BLM cannot deny the right of the lessee to develop somewhere within the leasehold, it has the authority to modify siting and design of facilities, to control the rate of development, and timing of activities and to require other reasonable mitigation (BLM Form 3100-11 and 43 CFR 3101.1-2).

The actions discussed on page 55 of the EA rarely occur. If, after leasing, it is discovered that the entire lease area must be protected for a special value, the BLM must review the impacts of drilling. Should BLM make the determination that the lessee will not be allowed to drill anywhere within the leasehold, Congressional action would be necessary to create special legislation to compensate the lessee.

b. *On page 40 of the EA it states that Dudley would initiate immediate abatement of dust on federal lands, does this mean that fugitive dust on other lands would not be treated?*

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Your citation is from the Applicant-Committed Measures section of the EA, which is part of the Proposed Action. On page 34 of the EA, it states that with the exception of cultural resources, paleontological resources, and sage grouse, all mitigation measures would be adhered to on federal and private lands, subject to landowner preferences or agreements with Dudley. This mitigation for air-quality would likely be adhered to on both federal and private lands, although the BLM has no control over agreements the operator has with private landowners.

c. *I am confused as to why the BLM assessed only impacts from the 2 existing authorized and the 6 proposed wells when the entire project consists of 19 wells. While the remaining 11 wells are not located on BLM lands, they are clearly a connected action to this project and need to be addressed in this document.*

This area is located within checkerboard lands where the operator had legal access to much of the private surface prior to implementing this project. Because of this, all eleven of the private wells were drilled during the preparation of this EA. The BLM had no authority to stop the development of the wells on private lands. In developing this EA the BLM had to look at what we did have control over and that was the development that would occur on the federal lands within the project area. Because two wells had been previously approved under the Application for Permit to Drill (APD) process, which included an approved EA, this would be federal development which existed in the project area, even if no further actions were allowed on public lands. The analysis focused on the six wells and associated facilities, because this is information the federal decision-maker needs to determine if development should occur on federal lands. The 19 wells were analyzed in the cumulative impact section of the EA.

d. *On page 63 of the EA it states, "Other Class I areas in the region include the Bridger Wilderness in Wyoming and the Mount Zirkel Wilderness in Colorado. I am not clear which region you are talking about. Other Class I areas in close proximity also include the Washakie and Fitzpatrick Wilderness Areas in Wyoming.*

Washakie and Fitzpatrick Wilderness Areas have been included in the text. Please see Appendix A of this decision record, Section 3.1.1, Air Quality.

e. *On page 104, Section 4.1.1., of the EA, it states that impacts would be significant if they resulted in violation of federal and/or state air quality attainment standards. What about impacts to visibility or acidification in Class I areas that the Federal Land Managers are required to protect by the Clean Air Act?*

Impacts to visibility and acidification are also estimated, but visibility and acidification thresholds are not legally enforceable. The Wyoming Department of Environmental Quality/Air Quality Division (WDEQ/AQD), would identify additional mitigation measures if thresholds were expected to be exceeded.

On page 40 of the document, the applicant has committed to protect air quality by adhering to all applicable Wyoming Ambient Air Quality Standards (WAAQS), National Ambient Air Quality Standards (NAAQS), and permit requirements including preconstruction testing, operating permits, and other regulations required by the WDEQ/WQD.

f. *On page 103 of the EA, the document states that, "Potential impacts for this project were quantified where possible." This does not appear to be done for the air quality information. There is no relevance of the direct project impacts and the cumulative impacts of other projects unless you also discuss the proximity to Class I areas and relative emissions. Nowhere in this section are the direct impacts related to this project alone discussed or quantified.*

No quantification of air quality emissions was completed for this project. The emissions resulting from this activity would be much the same as those found in similar oil and gas projects such as Continental Divide, but on a much smaller scale. The 19 well project described in the EA is within the limits of the 3,000 well air quality analysis prepared for the Continental Divide EIS, considering only 2,130 wells were approved. The analysis for the Continental Divide EIS project included impacts to Class I areas from oil and gas development in southern Wyoming.

Direct impacts to air quality related to this project are described on page 40 of the EA and include temporary deterioration of air quality in the immediate vicinity of project activities due to particulate matter and exhaust from equipment and vehicles.

g. *The first paragraph on page 105 of the EA states that the Pinedale Anticline and Continental Divide/Wamsutter II studies found no significant impacts to visibility at nearby Wilderness study areas. This is not true.*

Although the Pinedale EIS found that visibility impacts expected to exceed .5 dV on from 4 to 11 days, the Forest Service found this potential impact to be within acceptable range. The small size of the proposed project is not expected to increase this visibility impact.

The wording in the EA has been changed to reflect the Forest Service findings in the Pinedale EIS. Please see Appendix A, Section 4.1.1 for this change.

h. *Based on the fact that projects in southwest Wyoming are having a cumulative impact on visibility in Class I areas, off-site mitigation of any proposed action should be considered.*

Because no significant impacts to air quality are anticipated from this project, no off-site mitigation is proposed. Also consider the response to comment "j" below.

i. *Page 105 of the EA states that impacts would be minimized by the applicant-committed practices included in Chapter 2.0, especially Section 2.1.12.8. It is not clear to me if these mitigation practices will occur only on federal lands or on the entire project area.*

Please refer to response 8b.

j. *The entire cumulative effects section is not an adequate discussion of cumulative effects for several reasons including no discussion of existing sources, no discussion on what is reasonably foreseeable development (RFD), no quantification of the cumulative impacts of adding this project to existing sources, addition of these impacts with Continental Divide/Wamsutter II, no discussion on cumulative impacts on visibility to Class I areas. Also there is no discussion on the RFDs used in Continental Divide or Pinedale Anticline.*

The Continental Divide EIS analyzed the impacts to near and far field air quality for 3,000 wells; however, of these, only 2,130 wells were approved for drilling. Far field impacts and cumulative impacts resulting from the addition of the 19 well Seminoe Road Coalbed Methane Project are negligible.

During the next three years, the cumulative affects of the oil and gas projects in the Rawlins Field Office area will be reviewed. The Great Divide RMP RFD's will be updated in the Atlantic Rim Coalbed Methane EIS, as well as the revision of the Great Divide RMP.

9. Wyoming Game and Fish Department (WGFD)

a. *We have identified that there will be a loss of crucial winter habitat and disturbance due to project activities. The draft EA does not address mitigation for crucial winter habitats lost due to this project.*

No coalbed methane drilling or road/facility development is planned within the antelope crucial winter range boundary which lies in the Coal Creek Bay area (see page 83 of the EA). An existing access road runs through the winter range area and project vehicles may cause some stress to antelope, although, as stated on page 116 of the EA, based on observations of past projects, pronghorn antelope will likely habituate to the human presence within the SRPPA. Water discharge in the ephemeral drainages may temporarily enhance wildlife use in the area for the life-of-project. Because no further development associated with this exploration project is planned for the area delineated as crucial winter range, no loss of this habitat is anticipated.

b. *We have a concern regarding the impacts of this development on sage grouse populations in the area, particularly breeding activities. We note that only standard seasonal stipulations are proposed as mitigation. Research has demonstrated that the two-mile radius buffer is not always adequate. BLM should evaluate the need for further mitigation to be applied for this project. Mitigation to protect existing nests is proposed, but mitigation for the expected long-term loss of nesting and brood rearing habitat is not addressed.*

As noted on page 85 of the EA, only two sage grouse leks were identified during lek inventories for this project. They are located about 1.5 miles outside of the SRPPA boundary. Due to the minimal sage grouse habitat present within the SRPPA, the small amount of disturbance and short duration of surface-disturbing activities associated with this project, standard seasonal stipulations are adequate to protect sage grouse concerns.

c. *We are concerned with the effects of compressors on sage grouse breeding activities. The federal standard of 55 dBA at residences does not appear adequate for sage grouse since ambient noises during strutting periods are normally about 30 dBA. To prevent project noises from interfering with grouse breeding activities, BLM should consider requiring all compressors and similar noise producing devices during the production phase be muffled such that no greater than 30 dBA at 100 meters from the source.*

Please refer to responses 6d and 7b.

No known active leks occur within the project area, and the closest inventoried leks are 1.5 miles from the SRPPA boundary. Although compressors are discussed in the EA on pages 25-26, it states that, "in the event a compressor station and associated transmission pipeline are formally proposed, additional National Environmental Policy Act (NEPA) analysis would be conducted." It is also anticipated that all construction of the six wells and associated facilities will be completed prior to next year's sage grouse mating season. No impact from construction related noise are expected on strutting sage grouse.

d. *The EA apparently does not address nesting by burrowing owls.*

The EA does state that burrowing owls have been documented in the vicinity of the SRPPA and that prairie dog towns in the SRPPA likely act as a prey base for the species (p. 91). On page 85 of the EA, it states that, "...one burrowing owl nest was active in 2000..." with three fledglings observed (the nest is identified on map 3.3).

e. *The EA mentions that produced waters may be made available to local users. The EA should further address what these uses might be and how they might add to the cumulative effects on wildlife. These effects may include negative impacts on grouse productivity, specifically nesting success and early brood survival, that would need to be mitigated.*

No arrangements have been made to use produced coalbed methane waters for any beneficial use, other than those currently under existing water rights. Produced water will have to be discharged in the manner described in the NPDES permit which allows no deposition of substances that would result in the significant degradation of habitat for wildlife or adversely affect water supplies intended for agricultural or industrial use. As stated on page 23 of the Water Management Plan, based on limited water sampling the water quality will be adequate for wildlife and stock watering purposes. It is likely that the water in the drainages will enhance wildlife values in the area and redistribute livestock. Prior to implementing other uses, a change would need to be made to the NPDES permit, approved by WDEQ.

f. *While conceding that impacts to recreation, primarily hunting would occur due to this project, the EA makes no effort to propose mitigation for these impacts. BLM should evaluate the need to mitigate the lost public opportunities. In addition, the EA did not address our concern that access to or activities on public lands affected by this project may be curtailed to protect project resources.*

Due to the relatively small size of the project, loss of hunting opportunities should be minimal. Within the SRPPA, all public land that can be legally accessed would continue to be available for hunting and other recreational uses.

Also see response 11c.

g. *The EA should address all potential impacts that may arise if this pilot project is successful and full field development is proposed.*

Because the potential for economic production of coalbed methane gas is relatively unknown within this basin, no prediction of reasonably foreseeable development was analyzed. The project EA states that if the exploration project proves to be successful, further NEPA will be done on future projects (see page 132).

h. *The installation of overhead electrical lines may have a serious negative impact on local sage grouse populations.*

> In Chapter 4, Section 4.2.4, Wildlife, under mitigation measures described on page 118, it states that, "to provide additional protection for sage grouse and other area wildlife, the BLM may require power lines to be buried." Page 30 of EA states that all overhead power lines would be equipped with antiperching devices. Also see page 6 the final conference opinion from the Service, Appendix E.

i. *Under Section 2.1.13.12, Noise and Odor, it mentioned that all internal combustion engines would be muffled. No mention is made to what degree of muffling would be required. BLM should consider requiring all sources of noise during production phases be reduced to levels no more than 30 dBA at 100 meters from the source.*

> The timing restrictions will adequately mitigate construction noise. There are no long-term construction facilities associated with this project that would influence sage-grouse strutting in the long-term.

j. *We asked that there be a reasonable timeframe cited for the implementation of protective measures for wildlife from reserve pits be put into place for mitigation identified at Section 2.1.13.13, Wildlife and Fisheries, 2.1.13.14, All Species.*

> Fencing is required by BLM on the three nonworking sides of the reserve pit during drilling and, within 24 hours after drilling is completed and the rig structure is removed, the fourth side would be fenced to protect wildlife and livestock until the pit is reclaimed. In compliance with BLM Information Bulletin No. WY-93-054, netting (1-inch mesh) would be placed over reserve pits containing oil or other substances toxic to wildlife.

k. *Section 2.1.13.14. Mountain Plover. Project employees do not have legal authority to take and move wildlife carcasses.*

> Dudley will notify the WGFD immediately upon finding any road kill within 0.25 mile of a known mountain plover concentration area and request its removal by authorized personnel. In the instance that no appropriate personnel can be reached, Dudley agrees to cover the carcass until instructions for its removal are received from WGFD. Please see change to this section described in Appendix A.

l. *While prompt reclamation mitigates concerns over erosion and establishment of weeds, the grasses and forbs produced will be of little or no value as winter forage for pronghorn, which are browsers. Within crucial winter ranges, disturbances by roads and pipelines need to be viewed as long-term losses of crucial winier habitat until re-establishment of shrubs in 20+ years. How will this be dealt with?*

> Other than Carbon County Road 351, only one existing road, used for this project, is located in the area designated as pronghorn crucial winter range. No wells, pipelines, or power lines are planned to be placed in the area for this exploration project.

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10. Wyoming Outdoor Council

a. *The most basic problem with this entire project is that it will not conform with the RMP, and is therefore illegal. The Great Divide RMP does not even mention coalbed methane development as a possible land use.*

The decision to authorize the leasing of oil and gas parcels is in conformance with the overall planning direction for the Great Divide Resource Management Plan. Oil and gas exploration and development as a resource is specifically provided for in the RMP. The GDRA RMP minerals management program policy and goals are to provide opportunity for leasing, exploration, and development of oil and gas while protecting other resource values. The RMP does not specifically mention coalbed methane, however, this does not mean the activity is not allowed. "Methane" and "natural gas" are used interchangeably regardless of the source. No specific formation, bed, or seam was identified in the RMP as being suitable or unsuitable for oil and gas leasing, exploration, and development. The procedures described in the oil and gas appendix describe the general activity associated with all oil and gas field leasing, drilling, development and production, and abandonment. Site-specific differences in oil and gas development activities required for different geologic formations, depths, structure, etc., are addressed at the activity plan level in the exploration or development EA or EIS.

The general analysis presented in the RMP was based on the amount of disturbance associated with oil and gas development. The amount of long-term disturbance associated with this project (about 69 acres) is within the Reasonably Foreseeable Development Scenario described in the RMP.

b. *The gas production analyzed and approved in the RMP is deep methane gas, not coalbed methane. The RMP failed to address many problems and issues uniquely associated with CBM production including aquifer de-watering, surface water impacts, management of produced water, subsidence, and spontaneous combustion of de-watered coal seams.*

The Great Divide RMP does not distinguish between "deep" methane gas wells and "shallow" methane gas wells, from what formations development might occur, or impacts resulting from development in any given formation. These are all potential site-specific and project-specific concerns and impacts of development that would normally be addressed in the activity level environmental analysis.

c. *Reinjection of CBM produced waters was not even mentioned in the EA.*

Page 56 of the EA discusses re-injection under Section 2.3, Alternatives Considered But Not Analyzed In Detail. The alternative was rejected because the geologic conditions for re-injection are presently unknown within the area of the exploration project and costs associated with this type of evaluation are high. If the pilot proves successful, geologic investigations to determine the feasibility of re-injection may be implemented.

d. *How long and in what fashion will the aquifers recharge?*

Aquifer recharge is a function, among other things, of precipitation, infiltration rate on recharge areas, streamflow across recharge areas, vertical and horizontal hydraulic conductivity, and storativity. All of these vary with time and location, and these physical parameters are minimally affected by the proposed action. Further, they are poorly described in the project area. A significant portion of this projects' purpose is to add to the state of knowledge concerning these parameters. The time required for potentiometric surface recovery is a function of all these parameters. The comment also seems to suggest that spatial and temporal variability of these parameters be described before allowing the pilot project to go forward, when a primary goal of this pilot project is to begin to quantify some of these same parameters. To attempt to describe spatial and temporal variability of individual hydraulic parameters would be a computer exercise, that would do nothing to improve this analysis, short of providing a number with unknown accuracy.

e. *A water quality sample is taken from one well, presumably at a depth of 160 feet when the water is to be drawn out of 6,000 feet. The SAR levels are off the charts. Where is the analysis on the impacts of this water to Seminoe Reservoir and to the soils, vegetation, and aquatic life that exists in Pool Table Draw? Also, did BLM bother to provide baseline water quality samples of the reservoir and of the run-off that occurs in Pool Table Draw?*

As discussed on page 76 of the EA, the operator used Wyoming NPDES permit standards for CBM producers and collected water samples in May, October and November 2000 and January 2001, to indicate the type of formation water that would be produced.

SAR is elevated in the discharge water. This is noted on page 76 of the EA. There is little doubt that an elevated SAR will adversely affect vegetation, as the comment documents. This is particularly relevant to agricultural land. The WDEQ has addressed this issue at length in the NPDES permit, concluding that the lack of irrigation in the area limits the significance of the elevated values, while still requiring monitoring. See Appendix B, Water Management Plan, of the EA and responses 3i and 4c above.

f. *There is no mention of the impacts to the soils from the SAR levels on page 108.*

Please refer to response 3 c and i, and 4c.

g. *Surface subsidence is another huge issue that is completely ignored in this EA.*

It is suggested that subsidence is a likely outcome of a 19 well development such as that proposed in the SRPPA. In fact, subsidence would defeat the proponent, and would serve to make gas production impossible. As is described on pages 20 through 21 of the EA, the Almond and Allen Ridge coals occur in 2 to 12 foot stringers and at depths of 4,500 to 6,000 feet. Total coal thickness perforated is anticipated to be 60 to 70 feet. Water is incompressible. Complete aquifer dewatering would be necessary to allow aquifer media compression and not simply reduction in static water level. This means that water levels would need to be drawn down below the level of the top of the aquifer. While this may occur locally in the SRPPA, subsidence happening solely as a result of aquifer pumping is unlikely.

h. *There should be monitoring wells/depths for all formations, including the Medicine Bow, Lewis, Almond, Pine Ridge and Allen Coal Seams. Only in this way can aquifer depletion be accurately assessed as well as cross-aquifer contamination by produced water and fracing fluids.*

The comment suggests that properly cementing the well casing is not appropriate to prevent these issues from occurring. In fact, they are the ***only*** way to prevent this from occurring. This is described on page 20 of the EA. Additionally, the operator has committed to casing and cementing criteria that would protect all subsurface mineral- and water-bearing zones as required by federal and state regulations (page 43).

i. *Several wells are needed to measure not only pressure, but also changing water quality, the pace of recharge, and actual aquifer depletion.*

Drawdown of the potentiometric surface is the method by which the gas in the coal is mobilized. While it is true that wells within the Almond or Allen Ridge Formations would potentially be impacted, as well as wells completed in aquifers with hydraulic contact to the target zones, the SRPPA is perforating zones over 4,500 feet below the surface. The possibility that water wells would be completed in the zones at this depth is extremely unlikely, especially with the water quality encountered and the availability of better quality near surface water producing zones. The potential that other zones would be impacted is limited by the permeability of 2,000 feet of the Lewis Shale that directly overlays the Almond and Pine Ridge Formations, as well as by the aquifer hydraulics of the Almond and Pine Ridge Formations. Nevertheless, the applicant has committed to compensation for these losses. This is discussed in detail on pages 76, 110-111, and in Sections 2.1.1.2 and 2.1.13.11 of the EA, and in the Water Management Plan, Addendum 1. In addition, see response to 4g.

j. *There are no meaningful stipulations to handle mitigating weed impacts, also there is no analysis of the likelihood of salt-tolerant species that may invade and take over native vegetation on the ground surface where the CBM water will first be dumped.*

The discussion on page 115 of the EA identifies that undesirable plant species habitat would be created as a result of removal of existing vegetation and that noxious weeds could establish themselves in these areas.

On page 37, 2.1.13.5, a substantial list of applicant-committed measures discuss the control of noxious weeds along rights-of-way (ROWs) and at well sites. These mitigation measures are considered part of the Proposed Action.

Water discharge will be confined to the drainages discussed in the EA and the operator will be required to conform to provisions in the Water Management Plan and the WDEQ-approved NPDES permit. As stated numerous times above, SAR requirements and monitoring have been addressed by the state in the draft permit shown in Appendix C of the EA.

k. *The EA does not do a species by species analysis of wildlife impacts. Further, there is no analysis of likely impacts to fisheries within the Reservoir.*

All species affected by the proposed project are discussed in Section 3.2.2 of the EA. Those species not affected are not addressed. Mitigation measures are described in Section 2.1.13.13 and 2.1.13.14 of the EA as part of the proposed action to minimize impacts to wildlife and Threatened and Endangered species. A Biological Assessment was completed and informal consultation and formal conferencing was conducted with the U.S. Fish and Wildlife Service. There is limited available data with which to conduct an impact analysis on fisheries within Seminoe Reservoir. The operator has begun gathering baseline data for fish species currently residing in Seminoe Reservoir to see if there are any bioaccumulation of any metals that might be attributed to the pilot project. Given the small amount of water that will be produced and discharged into Seminoe Reservoir, and the rate of dilution, it is not anticipated that there will be any affect to fisheries in this reservoir.

See responses 5b and 6e.

l. *There is a lack of analysis on the hazards associated with hydraulic fracturing.*

The description in the EA states that the majority of the fracturing fluid will be discharged at the surface into the reserve pit. On page 22 of the EA, it states that excess fracturing fluid would be evaporated or removed from the site for disposal at an authorized location. In addition the constituents of fracturing materials are listed under the hazardous materials potentially utilized during drilling. Reference to the handling of potentially hazardous materials is described several times throughout the document (Sections 2.1.9., 2.1.13.7, 3.7, and 4.7). On page 39 it is stated that, "Dudley and its contractors would manage all hazardous materials in full compliance with all federal, state, and local regulations."

Any residual constituents of the fracing fluid that are carried to the surface with the discharge water could not be released unless the discharged water complied with water quality standards described in the NPDES permit.

m. *BLM acknowledges surface water rights exist on both Pool Table and Ayers Draws. A water right carries a right to quantity but also quality of water, however, BLM does not discuss the impact to existing water rights.*

You are correct that water rights carry not only an amount but a usage. The NPDES permit is designed to protect the quality for the beneficial use designated under the water right.

11. **Lance & Jill Morrow**

a. *Coalbed methane is not mentioned in the Rawlins BLM Resource Management Plan, therefore any CBM extraction on Federal lands under the Rawlins Field Office is illegal without amendments to your current RMP.*

Please see responses 10 a and b.

b. *There was no mention of intentional or accidental discharge of methane gas.*

On page 22 of the EA, it is acknowledge that, during completion operations and production testing, after measurement, non-commercial volumes of gas would be "temporarily flared or vented under controlled conditions at the well site." This venting would be accomplished pursuant to the Wyoming Oil and Gas Conservation Commission's regulations and BLM Notice to Lessee 4A (BLM NTL 4A).

The BLM NTL 4A states that during "initial well evaluation tests, not exceeding a period of 30 days or the production of 50 million cubic feet of gas, which ever occurs first, unless a longer test period has been authorized by the appropriate State regulatory agency and ratified or accepted by the BLM."

As stated on page 129 of the EA, "Methane migration is highly unlikely because of the depths of the coal seams in the SRPPA and their isolation by faults. Methane would also be controlled through APD conditions of approval that address well control, casing, ventilation, and plugging procedures appropriate to site-specific CBM development plans."

Dudley will comply with all existing applicable rules and regulations designed to both alert and protect workers and the public from any danger associated with oil and gas production facilities. This has been added as an applicant-committed measure at 2.1.13.18, Recreation.

c. *Address socio-economic effects on recreation and hunting on public lands from the possible destruction or degradation of entire reservoir from CBM activities.*

The analysis presented in this document does not indicate that the waters of Seminoe Reservoir will be adversely affected by this project. This is supported by the limited size of the project (a maximum of 18 producing coalbed methane wells) and the amount of discharge projected (initially 1,500 barrels of water per well per day with a steady state discharge of 900 bwpd per well) going into a very large body of water. The water from the project area flowing into Seminoe Reservoir with a storage capacity of over one million acre-feet will be greatly diluted. The water disposal from this project would have to meet EPA standards through the NPDES permit issued by WDEQ/WQD. Should further development occur, additional NEPA documentation will be required to assess impacts to Seminoe Reservoir and possible affects on recreation from a larger project.

d. *While the water component of CBM discharge will evaporate, the sodium will become more concentrated and will eventually continue to effect watersheds to the North Platte River, possibly beyond.*

Because of the small size of the project, it is unlikely that enough salts would accumulate to have anything other than a localized affect in receiving drainages. After the water discharge activities associated with this project were completed, salts would tend to accumulate in areas where water would tend to pond. After completion of the project, peak flows associated with summer storms and spring runoff would, in time, remove the salts from these drainages.

e. *Knowing that the water to be pumped into the Seminoe Reservoir has a high SAR value of 24.6. why is BLM allowing this unnecessary degradation of our public resources.*

The impact to the reservoir from high SAR values would likely be undetectable in the reservoir, but could have an effect on vegetation in the drainages. The SAR and the monitoring of these drainages are addressed through the NPDES permit. The WDEQ stated in their Statement of Basis for the NPDES permit that, "Due to the fact that there is no irrigation between the outfalls and the North Platte River, and the high dilution ratio at the reservoir, an SAR limit has not been established for this permit." They continue in this statement to say that, "continued monitoring at the

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three additional monitoring locations will help to characterize mixing within the reservoir and monitor SAR values." WDEQ makes it clear that this data will continually be evaluated by the WQD and the permit may be modified in the future to include more stringent limits and monitoring. In addition, part 1, page 1 of the permit states that, "...there shall be no deposition of substances in quantities which could result in a significant aesthetic degradation, or degradation of habitat for aquatic life, plant life, or wildlife; or which could adversely affect public water supplies or those intended for agricultural or industrial use."

Also see responses 3i and 11k.

f. *The impact to fish are unknown. We were under the impression that the purpose of an EA was to analyze the effects of a particular action or project on the environment.*

Page 118 of the EA acknowledges that metals tend to be persistent and can accumulate in ecosystems and food chains, however, bioaccumulation of metals in Seminoe Reservoir fish is not anticipated as a result of the Proposed Action due to the small volume of produced water which will be diluted upon discharge to Seminoe Reservoir. In addition, adherence to the NPDES permit discharge limitation are mandated in part to prevent adverse bioaccumulation effects.

The operator has taken steps to gather baseline data to address this issue, with this information and persistent monitoring, no bioaccumulation of metals in Seminoe Reservoir fish is anticipated.

Also see responses 5b, 6e, and 10k.

g. *The EA mentions that power lines would be installed with anti-perching devices but nothing was mentioned that the wires between the poles wouldn't serve as perches for kestrels. The only way to mitigate the perching and mortality (for mountain plover) effects of power lines would be to bury them underground.*

Please refer to response 9h.

h. *The EA mentions in numerous places that reclaimed areas will be reseeded with BLM-approved seed mixture but no where in the EA could we find out what was in the seed mix. Also the EA does not mention any type of precautions that Dudley would be taking to ensure cheatgrass is not introduced and spread on public lands for CBM production.*

A list showing the BLM standard seed mix has been added as Appendix F to the Decision Record.

The BLM has no standard procedure in place to deal with cheatgrass. If cheatgrass impinges on reclamation, the BLM can require the operator to treat cheatgrass just like Halogeton, Russian thistle, or any other weedy species.

12. Wildlife Management Institute

a. *It is stated on page 3 that the BLM would allow Dudley & Associates to develop two test wells on federal lands to allow for acquisition of data necessary for completion of the EA. Will there be another EA when these data are obtained before there is a record of decision?*

To facilitate the gathering of information for the Seminoe Road EA, BLM has already approved the drilling of two interim wells. Two Application for Permit to Drill (APD) were received and an in-house EA was completed for the wells. Approval was granted November 27, 2000.

b. *We have a concern regarding conformance with the appropriate Resource Management Plan.*

Please see responses 10 a and b.

c. *Sections of the EA dealing with impacts to wildlife and fisheries species offers general analysis and does not provide reader with expected impacts.*

Please refer to responses 5c, 6e, and 10k.

d. *Regarding impacts to threatened and endangered, proposed, candidate, and sensitive species is inadequate. Given the limited and general information presented on these species and on monitoring, how will the Bureau know that significant impacts are not occurring to T&E species?*

Please refer to responses 6g and 10k.

e. *I am concerned about the continued "industrialization" of Wyoming where each project brings new roads, power lines, pipelines, and infrastructure. There is a need for a much broader comprehensive look at the cumulative impacts of all of these development.*

The Federal Land Policy and Management Act of 1976, mandates the BLM to manage public lands for "multiple use" for their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people. The law asks BLM to consider a combination of balanced and diverse resource uses that take into account the long-term needs of future generations for both renewable and non-renewable resources.

As stated in the cumulative impacts section on page 132 of the EA, the project area remains relatively undeveloped. It also notes that the Seminoe Road and Seminoe Reservoir are developments that have been in the area for more than 50 years and past developments which are present in the area (pipeline, power line) have been adequately reclaimed. Miles outside of this project area the closest disturbance would be across Seminoe Reservoir where mining in the Hanna Basin has been occurring since the late 1800s and south to Sinclair Refinery which has been in business since 1924.

The total cumulative life-of-project disturbance is anticipated to be 69 acres or .08% of the project area. It is the intent to authorize an action that minimizes the adverse impact of the action in the long-term. The impact analysis sections show that the impacts of this pilot project are minor and short-term. The incremental addition of the project when considered with other existing development is quite minor.

f. *The document states on page 126 that hunting opportunities for pronghorn on the project area may be reduced due to safety and aesthetic considerations. It is important that the Bureau will not allow one use to completely replace other important uses on the public lands.*

The Seminoe Road Coalbed Methane Pilot Project should have little impact on recreational uses. Only 69 acres of disturbance are expected to remain during the life-of-project. Public lands with legal access are expected to remain open for recreation and hunting, although some additional care will be required when hunting around gas facilities. Because the lands are located within the checkerboard, the private landowner can continue to restrict access by hunters and recreationist across private lands.

13. Biodiversity Associates

a. *According to the EA, the need to extract natural gas is to reduce the country's dependence on foreign sources of energy. However, it also discusses that the proposed wells should be developed to prevent drainage of federal minerals by adjacent non-federal wells. So, according to the EA, our nation's energy needs would be satisfied without the BLM taking any action what-so-ever, which is by far the most reasonable alternative, considering BLM land provides a wealth of other important resources to the American public, such as wildlife habitat and recreational opportunities.*

Because natural gas is a clean-burning fuel it is an integral part of the U.S. energy future. The BLM has a mission of managing the land for multiple uses. The BLM manages not only mineral development, but over 18,000,000 acres of land within Wyoming considered big and small game habitat (BLM Report to the Public, 2000). National mineral leasing policies and the regulations by which they are enforced recognize the statutory rights of lease holders to develop federal mineral resources to meet continuing national needs and economic demands as long as undue environmental degradation is not incurred.

Federal oil and gas leases include a clause that the lessee must protect the minerals from drainage. Therefore, if it is believed that a certain percentage of the production of a well on non-federal lands is being drained from federal minerals, the lessee of the federal land will be notified that its lease is being drained and is given the option of paying compensatory royalty or drilling a protective well.

Based on the above information, compensation must be made to the BLM when federal leased lands are drained of oil and gas by adjacent federal or fee lands. The this may or may not involve drilling of those leased lands. However, on lands where a valid lease exist, the BLM cannot deny the lessee the right to develop somewhere within the leasehold. As stated on page 54 of the EA, BLM denial of the development of a valid oil and gas lease would violate the lessees contractual rights.

b. *The Seminoe Road Project should not be implemented because it is illegal. The Federal Land Policy Management Act requires that decisions, permits, and other authorizations conform to the RMP. The Great Divide RMP does not even mention coalbed methane as a possible land use.*

Please see responses 10 a and b.

c. *The project would contribute to the depletion of the area's aquifers, a resource required by ranchers and other inhabitants of the area.*

The zones from which water is being produced occur from 4,500 to 6,000 feet below the surface. It is unlikely that any water well would be completed to this depth, especially with the availability of water zones closer to the surface. The potential that aquifers in overlying zones would be impacted by the production of water associated with this pilot would be limited by the fact that 2,000 feet of Lewis Shale lies directly above the Almond and Allen Ridge Formations and would act as a barrier to the draw down of water from the shallower zones.

Page 43 of the EA states that current water uses on and adjacent to the SRPPA would be protected, and project activities would be conducted to prevent adverse effects on water quality and quantity as required by federal and state regulations.

Also see responses 10 d and h.

d. *The project would release vast amounts of very high saline water into Seminoe Reservoir and the North Platte River, degrading fisheries and lowering the quality of drinking water.*

Please see responses 3i, 4c, and 11d and e.

e. *The project would devastate the area's ecosystem and wildlife communities. This includes the destruction of one of the largest complexes of prairie dog towns. It would also destroy sage grouse leks and sage grouse habitat.*

Because of the small amount of disturbance associated with this project (146 acres of initial disturbance, 69 acres for life-of-project), the mitigation measures described in Chapters 2.0 and 4.0, reduce potential impacts to wildlife communities located within the SRPPA.

No sage grouse leks and only minor amounts of suitable sage grouse habitat are known to exist within the SRPPA. No construction is allowed within 0.25 miles of a sage grouse lek, so no leks will be destroyed. Construction activities on public lands in sage grouse nesting habitat within 2.0 miles of active sage grouse leks would not occur without a BLM-approved biologist first surveying for sage grouse nests. If a nest is found, the area would be avoided until after nesting is complete (page 44 of the EA). On page 51 of the EA the operator has committed to locating all project components at least 50 meters from prairie dog towns/complexes that are suitable black-footed ferret habitat.

Also see response 3i.

f. *The project would also result in the loss of known mountain plover habitat.*

The Final Conference Opinion for the Seminoe Road Coalbed Methane Pilot Project written by the U.S. Fish and Wildlife Service will be the guidance used for all project activities that may affect T&E species including the Mountain Plover. The opinion recognizes the direct loss of 49 acres of plover habitat from the 2,756 acres considered suitable habitat. Although the Service found that the project is "likely to adversely affect the proposed mountain plover," it is not likely to jeopardize the existence of the species or destroy critical habitat. The opinion is found in Appendix E.

Also see responses 5a, 6f, and 10k.

g. *The project would contribute to the decline of the area's ecosystem by increasing the occurrence of invasive, non-native plants.*

See responses 3i and 10j.

h. *It is preposterous that the BLM would allow this development without first understanding how the proposal would impact fisheries and aquatic ecosystems.*

Please see responses 5b, 6e, and 10k.

i. *The EA does not do a species-by-species analysis of wildlife impacts, nor does it do an overall assessment of the area's ecosystems.*

The analysis looked at the impact of the Seminoe Road Pilot Project as a whole as well as addressed the specific needs of T&E, state sensitive species, and species affected by the proposed action. The EA considers the affect that applicant-committed measures (Chapter 2.0) and Appendix C of the decision record, and BLM-required mitigation measures (Chapter 4.0) and Appendix D of the decision record, would have on reducing the impacts of the action.

Also see responses 5a, 6f, and 10k.

j. *Furthermore, a full EIS must be developed to account for issues raised in the Biodiversity Associates' scoping comments that were not adequately addressed in the EA.*

Implementation of the applicant-committed environmental practices and protection measures (Appendix C), the BLM additional mitigation measures (Appendix D), and adherence to the U.S. Fish and Wildlife Service Final Conference Opinion (Appendix E) will reduce potential environmental impacts and will not cause a significant impact to the human, natural, and physical environment and, therefore, preparation of an EIS is not necessary.

APPENDIX C

APPLICANT-COMMITTED ENVIRONMENTAL PRACTICES AND PROTECTION MEASURES

APPENDIX C

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2.1.13 Applicant-Committed Environmental Practices and Protection Measures

Dudley proposes to implement the following mitigation measures, design features, and procedures throughout the SRPPA to avoid or mitigate project impacts. The BLM may waive mitigation measures and design features if after a thorough analysis BLM determines that the resource(s) for which the measure was developed will not be impacted and/or alternative BLM-approved measures or guidance for protecting the resource(s) are developed (e.g., alternate survey methodologies). Further site-specific mitigation measures may be identified during APD and ROW application processes.

2.1.13.1 Preconstruction Planning and Design Measures

With the exception of applicant-committed practices for cultural resources, paleontological resources, and sage grouse, mitigation measures identified in this EA will be adhered to on federal and private lands, subject to landowner preferences or agreements with Dudley. Mitigation for cultural resources, paleontological resources, and sage grouse will be applied on all federal lands and on private lands affected by any federal undertaking unless landowner denial for access is documented in writing.

Well pads and associated access roads and pipelines will be selected and designed to minimize disturbance to areas of high wildlife habitat and/or recreational value, including wetlands and riparian areas.

To allow project activities to proceed in restricted areas and/or during periods of restriction (e.g., mild winters, unused raptor nests or potential sage grouse breeding/nesting sites, etc.), approval from the BLM in consultation with other agency personnel [e.g., Wyoming Game and Fish Department (WGFD), U.S. Fish and Wildlife Service (USFWS), and State Historic Preservation Office (SHPO)] will be required. This approval will be acquired prior to the initiation of specific project activities (i.e., well pad construction, drilling, completion, and facility installation) on areas requiring federal authorization when sensitive resource constraints are involved.

2.1.13.2 Disposal of Sewage, Garbage, and Other Waste Material

Portable self-contained chemical toilets will be provided for human waste disposal. Upon completion of operations, or as required, toilet holding tanks will be pumped and their contents disposed of at an approved sewage facility in accordance with applicable rules and regulations regarding sewage treatment and disposal. Each well site will be provided with one or more such facilities during drilling and completion operations.

All garbage and nonflammable waste materials will be collected in self-contained portable dumpsters or trash cages, and, upon completion of operations or as needed, the accumulated trash will be hauled off-site to an approved sanitary landfill. No trash will be placed in the reserve pit.

As soon as practical after removal of the drilling rig, all debris and other waste materials not contained in the trash cage will be cleaned up, removed from the well location, and disposed of at an approved landfill. No potentially harmful materials or substances will be left on location.

Trash will be placed daily in closed bins and removed from the project site no less than weekly.

2.1.13.3 Cultural Resources

Class III inventories will be conducted prior to construction in areas where new surface disturbances may be required on public lands (e.g., well pads and facility corridors). Dudley and its contractors will inform their employees about relevant federal regulations protecting cultural resources. If any cultural remains, monument sites, objects, or antiquities subject to the *National Historic Preservation Act of 1966* (as amended) or the *Archaeological Resource Protection Act of 1979* are discovered during exploration and/or construction within the SRPPA, activities shall immediately cease and the BLM will be notified.

Dudley will comply with all BLM and SHPO recommendations prior to potential construction activities near known historic sites (e.g., cabins, grave sites) or prehistoric sites within the SRPPA. In addition, Dudley will take the following actions.

1. Dudley will adhere to the Section 106 compliance process (36 C.F.R. 800) or National Cultural Programmatic Agreement (NCPA) and Wyoming State Protocol (WSP) prior to any surface-disturbing activity.

2. Dudley will halt construction activities in potentially affected areas if previously undetected cultural resource properties are discovered during construction. The BLM will be immediately notified, consultation with the SHPO and Advisory Council will be initiated as necessary, and proper mitigation measures will be developed pursuant to the WSP under the NCPA or 36 CFR 800.11. Construction will not resume until a Notice to Proceed is issued by the BLM.

3. If areas of religious importance, Traditional Cultural Properties, or other sensitive Native American areas are identified in affected areas, BLM, affected tribes, and Dudley will identify potential impacts and determine appropriate mitigative treatments on a case-by-case basis.

4. Dudley will pay the costs of BLM-required mitigation for cultural resources.

2.1.13.4 Paleontological Resources

If paleontological resources are uncovered during ground-disturbing activities, Dudley will suspend all operations that may further disturb such materials and immediately contact the BLM, who will arrange for a determination of significance and, if necessary, will recommend a recovery or avoidance plan. Mitigation of paleontological resources will be on a case-by-case basis, and Dudley will incur costs associated with BLM-required mitigations. Surface-disturbing activities will not resume until a Notice to Proceed is issued by the BLM.

2.1.13.5 Vegetation/Noxious Weeds

Dudley will control noxious weeds along ROWs and at wellpads, as well as on areas where the weeds originate on the ROW and invade adjacent areas. A list of noxious weeds will be obtained from the BLM or Carbon County Weed and Pest Office. On BLM lands, an approved Pesticide Use Proposal will be obtained before the application of herbicides or other pesticides for the control of noxious weeds.

Herbicide applications will be kept at least 500 feet from known special status plant populations.

Removal or disturbance of vegetation will be kept to a minimum through construction site management by utilizing previously disturbed areas, using existing ROWs, designating limited equipment/materials storage yards and staging areas, and other appropriate means.

Vegetation and soil removal will be accomplished in a manner that will minimize erosion and sedimentation.

Dudley will seed and stabilize disturbed areas in accordance with BLM-approved reclamation guidelines and/or private landowner specifications.

Dudley will evaluate all project facility sites for occurrence of waters of the U.S., special aquatic sites, and wetlands according to U.S. Army Corps of Engineers' (COE's) requirements. Efforts will be made to locate all project activities outside of these sensitive areas. If wetlands, riparian areas, streams, and ephemeral/intermittent stream channels are likely to be disturbed, COE Section 404 permits will be obtained as necessary, and appropriate mitigation measures will be taken.

Dudley will monitor drainages where project waters are discharged for changes in vegetative communities.

2.1.13.6 Road Construction/Transportation

Existing roads will be used to the maximum extent possible and upgraded as necessary. To decrease potential impacts, the number and mileage of roads will be limited by discouraging development of looped roads and by accessing wells from short resource roads off local roads. All roads will be constructed for the specific purpose of field development. Site-specific analysis under standard BLM procedures will be conducted for all roads during development.

All roads will be constructed with adequate drainage and erosion control structures (i.e., relief culverts, drainage culverts, wing ditches, etc.).

Roads will be built, surfaced, and maintained to provide safe operating conditions at all times as determined by the BLM, and all roads in areas of rough terrain or high erosion potential will be designed and monitored during construction by a professional engineer. The area disturbed will be minimized to reduce impacts and to reduce the area requiring reclamation.

All development activities along approved ROWs will be restricted to areas authorized in approved ROWs.

Available topsoil (up to 12 inches) will be stripped from all road corridors prior to commencement of construction activities, will be stockpiled, and will be redistributed and reseeded on backslope areas of the borrow ditch after completion of road construction activities. Borrow ditches will be reseeded in the first appropriated season after initial disturbance.

All project-related roads not required for routine operation and maintenance of producing wells or ancillary facilities will be closed and reclaimed as soon as possible as directed by the BLM or private landowner. As necessary, these roads will be permanently blocked, recontoured, reclaimed, and revegetated by Dudley, as will disturbed areas associated with permanently plugged and abandoned wells.

Dudley will be responsible for maintenance of roads in the SRPPA and for closure of roads following production activities.

Dudley will maintain roads in a safe usable condition. A regular maintenance program will include, but not be limited to, blading, ditching, culvert and cattleguard maintenance/replacement, and surfacing, as needed. Design, construction, and maintenance of roads will be in compliance with the standards contained in BLM Manual, Section 9113 (Roads), and in the "Gold Book," *Oil and Gas Surface Operating Standards for Oil and Gas Exploration and Development, Third Edition* (BLM and U.S. Forest Service 1989). Vehicles will remain on roads at all times--no off-road travel will occur, except in emergency situations.

During drilling and operation, traffic will be restricted to Carbon County Road 351 and roads developed for the project. Use of unimproved roads will be allowed only in emergency situations. Speed limits will be set commensurate with road type, traffic volume, vehicle types, and site-specific condition, as necessary, to assure safe and efficient traffic flows. Signs will be placed along roads, as necessary, to identify speed limits, travel restrictions, and other standard traffic control information. In addition, newly developed or improved roads through crucial wildlife areas will be gated and locked as directed by the BLM to prevent unnecessary wildlife disturbances.

Dudley will comply with existing federal, state, and county requirements and restrictions to protect road networks and the traveling public.

Special arrangement will be made with the Wyoming Department of Transportation (WDOT) and Carbon County Road and Bridge to transport oversize loads to the SRPPA. Otherwise, load limits will be observed at all times to prevent damage to existing road surfaces.

2.1.13.7 Hazardous Materials

Dudley and its contractors will manage all hazardous materials in full compliance with all federal, state, and local regulations. A Spill Prevention, Control, and Countermeasure (SPCC) plan will be in place and will be followed in the event of a spill. Dudley will prepare a field-wide SPCC Plan and, after each well is drilled and determined to be suitable for production, will prepare a SPCC Plan specifically for that well. Copies of the SPCC Plans will be given to all appropriate Dudley personnel, contractors, and field personnel, and will also be available at Dudley's Denver, Colorado, office.

2.1.13.8 Air Quality

Dudley will adhere to all applicable WAAQS, NAAQS, and permit requirements, including preconstruction testing, operating permits, and other regulations, as required by the WDEQ-AQD.

Dudley will initiate immediate abatement of fugitive dust by application of water, chemical dust suppressants, or other measures on federal lands and during times of high use (i.e., construction, drilling, and work over operations) when air quality, soil loss, or safety concerns are identified by the BLM or the WDEQ-AQD. These concerns include, but are not limited to, potential exceedences of applicable air quality standards. The BLM will approve dust control measures, locations, and application rates. If watering is the approved control measure, Dudley will obtain water from BLM-approved sources, including the water produced from existing CBM wells.

2.1.13.9 Topography and Physiography

Areas with high erosion potential and/or rugged topography (i.e., steep slopes, stabilized sand dunes, floodplains, unstable soils) will be avoided where possible. Special mitigation measures to control erosion will be applied to such areas if they are disturbed.

Upon completion of construction and/or production activities, Dudley will restore the topography to near pre-existing contours at well locations, facilities corridors, pipelines, and other facility sites.

2.1.13.10 Soils

Sufficient topsoil to facilitate revegetation will be segregated from subsoils during all construction operations and returned to the surface upon completion of operations. Topsoil stockpiles will be seeded or otherwise protected to prevent erosion and to maintain soil microflora and microfauna.

Dudley will keep the area of disturbance to the minimum necessary for drilling activities and subsequent production activities while providing for safety.

Dudley will restrict off-road vehicle activity by employees and contract workers.

Dudley will minimize project-related travel during periods when soils are saturated and excessive road rutting (e.g., > 4 inches) may occur.

Where practical, Dudley will locate pipelines immediately adjacent to roads or other pipelines and cluster pipeline and all other buried utilities in the corridor to avoid creating additional areas of disturbance.

Surface disturbance and/or occupancy will not occur on slopes in excess of 25%, nor will construction occur with frozen or saturated soil material or when watershed damage is likely, unless an adequate plan is submitted to the BLM that demonstrates potential impacts will be mitigated.

Temporary erosion control measures such as mulch, jute netting, or other appropriate methods will be used on unstable soils, steep slopes, and wetland areas to prevent erosion and sedimentation until vegetation becomes established.

Dudley will minimize disturbance to vegetated cuts and fills on new and existing roads.

Dudley will replace topsoil or suitable growth materials over all disturbed surfaces prior to revegetation.

Dudley will revegetate all disturbed sites as soon as practical following disturbance.

2.1.13.11 Water Resources

Dudley will adhere to the mitigation and monitoring measures identified in the Water Management Plan (see Appendix B) and associated WDEQ-WQD water discharge permits (see Appendix C). All project actions will be conducted in compliance with the *Clean Water Act*.

Dudley will follow all practical alternatives and designs to limit disturbance within drainage channels, including ephemeral and intermittent draws.

Surface disturbance within 500 feet of perennial surface water and/or wetland and riparian areas will be avoided, where practical.

Intermittent and ephemeral drainages will be protected from surface disturbance within 100 ft of the channel, where practical.

Where wetlands and riparian areas, stream, river, or ephemeral drainage channels must be disturbed, the following measures will be employed.

1. Wetland areas will be crossed during dry conditions (i.e., late summer, fall, or dry winters). Winter construction activities will only occur prior to soil freezing or after soils have thawed.

2. Streams, wetlands, and riparian areas disturbed during project construction will be restored as near as practicable to preproject conditions. If impermeable soils contributed to wetland formation, soils will be compacted to re-establish impermeability.

3. Perennial water crossings and facilities construction adjacent to such waters will not be constructed during important fish spawning periods in those waters.

4. Streams will be crossed perpendicular to flow, where practical.

5. Wetland topsoil will be selectively handled.

6. Recontouring and BLM-approved native species will be used to revegetate the banks to aid in soil stabilization.

7. Revegetation operations will begin on impacted areas in the first appropriate season after completion of project activities.

The discharge of all water (stormwater, produced water) will occur in conformance with WDEQ-WQD, BLM, and WOGCC rules and regulations (WDEQ 1978; *BLM Onshore Oil and Gas Order No. 7*) (see also Appendices B and C).

Current water uses on and adjacent to the SRPPA will be protected (see Appendix B, Water Management Plan), and project activities will be conducted to prevent adverse effects on water quality and quantity as required by federal and state regulations.

BLM/WOGCC casing and cementing criteria will be adhered to in order to protect all subsurface mineral- and water-bearing zones in accordance with standard oil-field practice.

Baseline wetland delineation/vegetation mapping will be conducted in drainages where water associated with coalbed methane production will be discharged. The investigation will include a routine on-site wetland delineation with the Army Corps of Engineers (COE), a detailed description including size, and photographic record of all encountered vegetative communities, with a report and map suitable for the COE and BLM. This effort will begin prior to the discharge of any produced water into the drainages.

2.1.13.12 Noise and Odor

Noise and odor on the SRPPA will be minimized by keeping all internal combustion engines muffled and maintained.

2.1.13.13 Wildlife and Fisheries

Reserve pits or other project-related impoundments potentially hazardous to wildlife will be adequately protected (e.g., fenced, netted) to prohibit wildlife access as directed by the BLM and to ensure protection of migratory birds and other wildlife.

Dudley will implement policies designed to control poaching and littering and will notify all employees (contract and company) that conviction of a major game violation may result in disciplinary action. Contractors will be informed that any intentional poaching or littering within the SRPPA may result in dismissal.

Dudley will internally enforce existing drug, alcohol, and firearms policies.

Construction and drilling activities on crucial big game winter range designated in this EA will be curtailed during critical winter periods (November 15 through April 30) unless exceptions are granted by the BLM. Proposed facilities located within crucial winter range will be scheduled for development outside of the November 15-April 30 time period, unless exceptions are granted by BLM pursuant to their rules, regulations, and policies.

ROW fencing associated with the project will be kept to a minimum, and any necessary ROW fences will meet BLM and WGFD approval for facilitating wildlife movement. Wildlife-proof fencing will be constructed around areas potentially hazardous to wildlife (e.g., reserve pit, toxic materials storage location) as deemed necessary by the BLM and around reclaimed areas if it is determined that wildlife species are impeding successful reestablishment of vegetation.

Any power line construction will follow recommendations by the APLIC (1994, 1996) to avoid collisions and electrocution of raptors and other avifauna.

Proposed disturbance within 0.5 to 1.0 mi of identified raptor nests will require survey by a qualified biologist to determine nest activity status prior to commencement of drilling and construction during the raptor nesting period. If an active raptor nest is identified within 0.5-1.0 mi (depending on species and line of sight) of a proposed site, Dudley will restrict construction during the critical nesting season for that species.

Known active sage grouse leks and adjacent public land areas (2.0-mi radius from lek centers) will be avoided during the breeding and nesting season (March 1 through June 30), and no construction activities will occur on public lands within 0.25 mi of known active sage grouse lek sites. Construction activities on public lands in sage grouse nesting habitat within 2.0 mi of active sage grouse leks will not occur without a BLM-approved biologist first surveying for sage grouse nests, and if a nest is found, the area will be avoided until after nesting is complete.

2.1.13.14 Threatened, Endangered, Proposed, Candidate, and Sensitive Animal and Plant Species

All Species

1. To ensure construction activities occur commensurate with identified mitigations, Dudley will have a BLM-approved biologist on-site during construction as deemed appropriate by the BLM and as identified during APD and ROW application processing.

2. Pipelines, roads, well pads, and ancillary facilities will be located and designed to minimize disturbances to areas of high wildlife habitat value (e.g., prairie dog colonies, areas of suitable mountain plover habitat, sage grouse leks, cushion plant communities [i.e., mountain plover nesting habitat], playa lakes, wetlands, and riparian areas).

3. Areas with high erosion potential and/or rugged topography (steep slopes, stabilized sand dunes, floodplains, unstable soil) will be avoided, where practical.

4. Removal or disturbance of vegetation will be minimized through construction site management (e.g., by utilizing previously disturbed areas, using existing ROWs, designating limited equipment/materials storage yards and staging areas, scalping), and Dudley will develop and implement detailed reclamation specifications including stabilizing and revegetating disturbed areas to minimize impacts from project-related activities.

5. To minimize wildlife mortality due to vehicle collisions, Dudley will advise project personnel regarding appropriate speed limits on designated access roads as identified by BLM. Potential increases in poaching will be minimized through employee and contractor education regarding wildlife laws. If violations are discovered, the offending employee or contractor will be disciplined and may be dismissed by Dudley and/or prosecuted by the WGFD and/or USFWS.

6. Areas potentially hazardous to wildlife (e.g., reserve pits, evaporation pits, hazardous material storage areas) will be adequately protected (e.g., fenced, netted) to prevent access by wildlife and to ensure protection of migratory birds and other wildlife as deemed necessary by the BLM.

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7. Firearms and dogs will not be allowed on-site by project employees. Dudley will enforce existing drug, alcohol, and firearms policies.

8. To protect plant populations and wildlife habitat, project-related travel will be restricted to designated access roads--no off-road travel will be allowed except in emergencies.

9. Wildlife-proof fencing will be utilized on reclaimed areas if it is determined that wildlife species and/or livestock are impeding successful vegetation establishment.

10. Potential impacts to fisheries will be minimized by using proper erosion control techniques (e.g., water bars, jute netting, rip-rap, mulch) and adherence to the Water Management Plan (see Appendix B). Construction within 500 feet of open water and 100 ft of intermittent or ephemeral channels will be avoided unless otherwise authorized by BLM. Channel crossings requiring trenching will be constructed when flows are not expected (late summer or fall). All necessary crossings will be constructed nearly perpendicular (at right angles) to flow.

11. Dudley will finance site-specific surveys for threatened, endangered, proposed, and candidate (TEP&C) and other sensitive plant species (e.g., Blowout [Hayden's] penstemon) prior to any surface disturbance occurring after October 15, 2000, in areas determined by the BLM to contain potential habitat for such species (BLM Directive USDI-BLM 6840). These surveys will be completed by a qualified botanist as authorized by the BLM, and this botanist will be subject to BLM's special status plant survey policy requirements. Data from these surveys will be provided to the BLM, and if any sensitive plant species are found they will be avoided or if their habitats are found BLM/USFWS recommendations for avoidance or mitigation will be implemented. Project facilities will be relocated to avoid TEP&C and other sensitive plant species and/or their habitat.

12. Herbicide applications will be prohibited within 500 feet of known sensitive plant populations.

13. Site-specific surveys for TEP&C (e.g., black-footed ferret, mountain plover) and other sensitive animal species will be conducted prior to surface disturbance in areas determined by the BLM to contain potential habitat for such species pursuant to BLM Directive USDI-BLM 6840. These surveys will be completed by the BLM and/or a BLM-authorized Dudley-financed biologist prior to disturbance occurring after October 15, 2000. Surveys will focus on those TEP&C species known to occur on the SRPPA, as well as those potentially occurring in the area. If TEP&C or other sensitive animal species are found on the SRPPA, construction activities will be delayed, the BLM and USFWS will be notified, and appropriate avoidance and/or protection measures will be implemented as determined necessary during conferencing and consultation. Habitats where TEP&C and other sensitive animal species are found or are likely to occur will be avoided, where practical, through relocation of project facilities.

14. Pursuant to the *Endangered Species Act*, Dudley will adhere to all survey, mitigation, and monitoring requirements identified in the Biological Assessment (BA) and USFWS Biological Opinion (BO) for this project.

Mountain Plover

1. Dudley and its contractors will be shown how to identify mountain plover and will be provided information about its habitat requirements, natural history, status, threats, and possible impacts of gas development activities. Incidental observations of mountain plovers will be solicited from all field personnel.

2. During the period of May 1-June 15 throughout the LOP unless otherwise approved by the USFWS, mountain plover surveys will be conducted by the BLM or a Dudley-financed BLM-approved biologist in accordance with existing or revised USFWS guidelines (USFWS 1999).

3. If an active nest and/or mountain plover are found within 200 m of proposed facilities, informal conferencing will occur with the USFWS.

4. If an active nest is found in the survey area, planned activities will be delayed 37 days, or 1 week post-hatching, or if a brood of flightless chicks is observed, activities will be delayed at least 7 days.

5. Where access roads and/or well locations have been constructed prior to the mountain plover nesting season (April 10 - July 10) and use of these areas has not been initiated for development actions prior to April 10, a BLM-approved biologist will conduct surveys of these disturbed areas prior to use to determine whether mountain plover are present. In the event plover nesting is occurring, Dudley will delay development activities until nesting is complete.

6. During the LOP, unless otherwise approved by the USFWS, mountain plover nest density, success, and productivity within the SRPPA will be monitored by a Dudley-financed BLM-approved biologist. Reports will be submitted to the BLM and USFWS Wyoming Field Office annually.

7. Construction of ancillary facilities (e.g., compressor stations, processing plants) will be avoided within 0.25 mi of known mountain plover concentration areas, where practical.

8. If nesting habitat is disturbed, these disturbed areas will be reclaimed to approximate original conditions (topography, vegetation, hydrology, etc.) after completion of activities in the area, in part to ensure suitable mountain plover breeding habitats are present on the reclaimed landscape. Seed mixes and application rates for reclamation will produce stands of vegetation suitable for plover nesting in suitable plover habitat, while meeting the BLM's requirements for stabilizing soil and controlling weeds. Seed mixes and application rates for reclamation will be designed to produce stands of sparse low-growing vegetation suitable for plover nesting in previously suitable mountain plover habitat. Reclamation will attempt to return the plant community to the pre-existing condition as soon as possible.

9. To minimize destruction of nests and disturbance to breeding plovers from construction and reclamation activities, grading, seeding, or other ground-disturbing activities will not occur from April 10 to July 10 unless surveys within 200 m of project facilities consistent with USFWS-approved methods find that no plovers are nesting in the area.

10. Because adults and broods may forage along roads, particularly at night (0.5 hour after sunset to 0.5 hour before sunrise), traffic speed and volume will be limited during the breeding season (April 10 - July 10) in identified plover habitat, where practical. Wherever possible, road construction through plover habitat will be avoided. Within 0.25 mi of identified concentration areas, speed limits will be posted at 25 mph on resources roads, and 35 mph on local roads during the brood-rearing period (June 1 - July 10), where practical. Traffic will be minimized by car-pooling and organizing work activities to limit trips on roads within 0.25 mi of known plover concentration areas between June 1 and July 10, where practical.

11. Project-related features that increase the population levels or hunting efficiency of predators of the mountain plover will be limited. Creation of hunting perches or nest sites for avian predators within 0.25 mi of identified concentration areas will be avoided where practicable by including

perch-inhibitors in their design and by using the lowest practicable structures for fences and other elevated structures, where necessary. Road-killed animals will be promptly removed from areas within 0.25 mi of identified concentration areas to avoid attracting avian and mammalian predators and supplementing their natural food supplies.

12. Plugged and abandoned wells within 0.25 mi of mountain plover nesting aggregation areas will be identified with markers four foot tall that have perch inhibitors on top to avoid creation of raptor hunting perches. This is the lowest structure that is in compliance with existing regulatory requirements of the State of Wyoming.

13. All suspected observations of mountain plover adults, eggs, chicks, or carcasses on the SRPPA, however obtained, will be reported within 24 hours to:

    Wildlife Biologist, BLM
    (307) 328-4200
    Rawlins Field Office
    P.O. Box 2407
    1300 North Third Street
    Rawlins, WY 82301; and

    Field Supervisor or Designee, USFWS
    (307) 772-2374
    Wyoming Field Office
    4000 Airport Parkway
    Cheyenne, WY 82001.

    Observations will include a description including what was seen, time, date, exact location, and observer's name, address, and telephone number. Carcasses or other suspected plover remains will be collected by the BLM or USFWS employees and deposited with the USFWS, Wyoming Field office.

14. Dudley will notify the WGFD immediately upon finding any road kill within 0.25 mile of a known mountain plover concentration area, and request its removal by authorized personnel. In the instance that no appropriate personnel can be reached, Dudley agrees to cover the carcass until instructions for its removal are received from WGFD.

Black-footed Ferret

1. Dudley and its contractors will be shown how to identify black-footed ferret and their sign and will be provided with information about its habitat requirements, natural history, status, threats, possible impacts of gas development activities, and ways to minimize these impacts.

2. All white-tailed prairie dog towns/complexes will be mapped within the SRPPA, and associated burrow densities on potentially affected towns will be determined pursuant to Biggens et al. (1993) or other BLM- and USFWS-approved technique during 2000 and every 3-5 years thereafter throughout the LOP to determine whether the criteria established in the USFWS (1989) guidelines for black-footed ferret habitat are met.

3. If prairie dog towns/complexes suitable as black-footed ferret habitat are present, attempts will be made to locate all project components at least 50 m (164 feet) from these towns/complexes to avoid direct impacts to the towns.

4. Surface-disturbing activities in potential black-footed ferret habitat (i.e., prairie dog colonies or complexes greater than 200 acres in extent and having more than eight open burrows per acre) will not be conducted unless the area has been surveyed within the previous 12 months (surveys will again be required after August 29, 2001) for black-footed ferret pursuant to USFWS guidelines (1989) or other BLM- and USFWS-approved methodology.

5. In the event a black-footed ferret or its sign is found, the BLM Authorized Officer will stop all action on the application in hand and/or action on any future application that may directly, indirectly, or cumulatively affect the colony/complex and will initiate Section 7 review with the USFWS. No project-related activities will be allowed to proceed until the USFWS issues its BO. The USFWS BO will specify when and under what conditions and/or prudent measures the action could proceed or whether the action will be allowed to proceed at all.

6. Dudley and its and contractors will prohibit project employees from having dogs on the SRPPA.

7. Observations of black-footed ferrets, their sign, or carcasses will be reported within 24 hours to the BLM, Rawlins Field Office, and the USFWS.

8. All suspected observations of black-footed ferrets, their sign, or carcasses on the SRPPA and the location of the suspected observation, however obtained, will be reported within 24 hours to:

   Wildlife Biologist, BLM
   (307) 328-4200
   Rawlins Field Office
   P.O. Box 2407
   1300 North Third Street
   Rawlins, WY 82301; and

   Field Supervisor or Designee, USFWS
   (307) 772-2374
   Wyoming Field Office
   4000 Airport Parkway
   Cheyenne, WY 82001.

   Observations will include a description including what was seen, time, date, exact location, and observer's name, address, and telephone number. Carcasses or other suspected ferret remains will be collected by the BLM or USFWS employees and deposited with the USFWS, Wyoming Field office.

Swift Fox

If a swift fox den is encountered during construction or other development activities, potentially disruptive actions to denning swift fox as identified by the BLM will not occur from March 1 to July 31 to protect denning areas.

2.1.13.15 Socioeconomics

Dudley will implement hiring policies that encourage the use of local or regional workers.

2.1.13.16 Livestock/Grazing Management

Dudley will coordinate project activities with ranching operations to minimize conflicts with livestock movement or other ranch operations and will maintain all fences, cattle guards, and other livestock-related structures required for their transportation network.

In areas of high livestock use, fencing of reclaimed areas will occur as necessary to ensure successful revegetation.

2.1.13.17 Land Status/Use

Roads, power lines, and pipelines will be located adjacent to existing compatible linear facilities wherever practical.

All abandoned wells will be plugged utilizing BLM, WOGCC, and WDEQ procedures designed to protect subsurface aquifers; procedures may also include MSHA/WOGCC-approved techniques designed to facilitate future surface and subsurface coal mining operations at specific public land locations and in specific coal seams as deemed appropriate by the BLM.

2.1.13.18 Recreation

Dudley will post appropriate warning signs and require project-related traffic to adhere to appropriate speed limits on project-related roads. Dudley will inform their employees, contractors, and subcontractors that long-term camping (greater than 14 days) on federal lands or at federal recreation sites is prohibited.

2.1.13.19 Visual Resources

All surface facilities within the SRPPA will be designed to minimize disturbance, to preserve the viewshed from Seminoe Road and Seminoe Reservoir, and to conform to standards for the applicable Visual Resource Management (VRM) class (Class II or III). Facilities will be painted with standard environmental colors to blend with the surrounding landscape.

APPENDIX D

BLM-REQUIRED MITIGATION

APPENDIX D

BLM-REQUIRED MITIGATION

The following additional mitigation measures were identified during the analysis (Chapter 4.0 of the EA) and will be applied by the BLM during the permitting process for individual components as deemed necessary to further reduce adverse impacts upon the environment. Furthermore, additional site-specific mitigation measures may be identified and applied during APD and ROW application reviews.

Implementation of these measures on state or private lands will be subject to state or landowner preferences and agreements with the operator. Lease stipulations will be enforced where applicable on all federal oil and gas leases within the Seminoe Road Coalbed Methane Pilot Project Area. Development activities on all lands will be conducted in accordance with all appropriate federal, state, and county laws, rules and regulations.

Some of the measures identified below may have been slightly modified to better clarify the conditions under which they may be applied. Only those resource values where additional mitigation was identified during the analysis are included. Some of these measures may duplicate those identified in Appendix C, Applicant-Committed Environmental Practices and Protection Measures.

4.1.2.3 Topography and Physiography Mitigation

The BLM may deny all proposed surface disturbances within 500 feet of perennial surface water and/or wetland areas and/or within 100 feet of intermittent and ephemeral drainage channels. Additionally, the BLM may deny activities in areas with high erosion potential and/or rugged topography. Any disturbance in the aforementioned areas will require site-specific mitigations. All roads will be required to be crowned, ditched, and appropriately surfaced (e.g., graveled).

4.1.4.3 Soils Mitigation

The BLM may deny all proposed surface disturbances within 500 feet of perennial surface water and/or wetland areas and/or within 100 feet of intermittent and ephemeral drainage channels. Additionally, the BLM may deny activities in areas with high erosion potential and/or rugged topography. Any disturbance in the aforementioned areas will require site-specific mitigations. Detailed plans of proposed surface-disturbing actions may be required for developments proposed on slopes and/or in areas where soil or site stability/erodability factors are deemed to be limited by the BLM.

All roads will be required to be crowned, ditched, and appropriately surfaced (e.g., graveled). The BLM may require Dudley to apply gravel or other appropriate road surfacing materials to specific SRPPA roads. Five feet of fill may be required over reclaimed reserve pits. The BLM may also require limited surface disturbance (e.g., no ROW surface grading) during gas and water pipeline construction.

4.1.5.3 Water Resources Mitigation

The BLM may deny all proposed surface disturbances within 500 feet of perennial surface water and/or wetland areas and/or within 100 feet of intermittent and ephemeral drainage channels. Additionally, the BLM may deny activities in areas with high erosion potential and/or rugged topography. Any disturbance in the aforementioned areas will require site-specific mitigations. Detailed plans of proposed surface-disturbing actions may be required for developments proposed on slopes and/or in areas where soil or site stability/erodability factors are deemed to be limited by the BLM.

All roads will be required to be crowned, ditched, and appropriately surfaced (e.g., graveled). The BLM may require Dudley to apply gravel or other appropriate road-surfacing materials to specific SRPPA roads. Five feet of fill may be required over reclaimed reserve pits. The BLM may also require limited surface disturbance (e.g., no ROW surface grading) during gas and water pipeline construction.

All mitigation measures recommended in the Water Management Plan (see Appendix B) or required by WDEQ/WQD during NPDES permitting (see Appendix C) would be required by the BLM.

4.1.6.3 Noise and Odor Mitigation

The BLM may require that noise level increases be limited to no more than 10 dBA above background levels at sage grouse leks.

4.2.1.3 Vegetation Mitigation

The BLM may require limited surface disturbance (e.g., no ROW surface) grading during gas and water pipeline construction. Where new roads are constructed rather than upgrading existing roads/two-tracks, and these new roads make existing roads/two-tracks redundant, the BLM may require reclamation of these existing redundant roads/two-tracks.

4.2.2.3 Wetlands and Riparian Area Mitigation

The BLM may deny all proposed surface disturbances within 500 feet of perennial surface water and/or wetland areas and/or within 100 feet of intermittent and ephemeral drainage channels.

4.2.4.3 Wildlife and Fisheries Mitigation

The BLM may require that noise level increases be limited to no more than 10 dBA above background levels at sage grouse leks. Sage grouse nest surveys of proposed development areas may be conducted by a BLM-approved, Dudley-financed biologist as directed by BLM. To provide additional protection for sage grouse and other area wildlife, the BLM may require power lines to be buried.

Because the potential for bioaccumulation is unknown, the BLM may require biological monitoring of fish and/or other aquatic species in Pool Table Draw and/or Seminoe Reservoir to determine baseline metal concentrations and whether bioaccumulation is occurring.

4.2.5.3 Threatened, Endangered, Proposed, Candidate, and Sensitive Species Mitigation

The BLM may deny all project development activities within areas where threatened, endangered, proposed, candidate, and other sensitive plant and animal species are found or are likely to occur.

4.3.3 Cultural Resources Mitigation

Impacts to cultural resources would be mitigated following procedures as specified in 36 CFR 800 and/or the national programmatic agreement for cultural resources and statewide protocol. Class I and Class III inventories would be conducted prior to disturbance on all federal lands and on state and private lands affected by federal undertakings unless landowner denial for access is documented in writing. Where landowners deny access, alternative cultural resource mitigation resolution methodologies may be applied or the development may be denied. In selected areas identified by the BLM, cultural resource surveys may require testing and/or mitigation to determine significance. All resources identified during these inventories would be evaluated for eligibility for the National Register of Historic Places (NRHP) by the BLM, and the State Historic Preservation Office (SHPO) would be consulted as necessary under the statewide protocol. In addition, all eligible or listed sites identified in Class I and Class III inventories would be avoided or mitigated, as would areas with high potential for significant cultural deposits--such as aeolian deposits, alluvial deposits along perennial waterways and other major drainages and terraces, and colluvial deposits at the base of low slopes and hills, where possible. If any NRHP (eligible or listed) sites found within proposed disturbance areas cannot be avoided, a data recovery program or other mitigation would be implemented as deemed appropriate by the BLM in consultation with the SHPO, the Advisory Council on Historic Preservation as necessary, and Dudley. Cultural sites identified during inventories would be avoided, where possible.

If a large number of sites cannot be avoided or other adverse effects may occur, a programmatic agreement among the aforementioned parties may be developed. Programmatic agreements would usually be in place when properties are subjected to mitigation through data recovery. Additionally, programmatic agreements and/or discovery plans may be required to be in place prior to approval of APDs or ROW applications in areas with high densities of cultural resource sites which may occur along culturally sensitive areas such as the ephemeral drainages that flow through the SRPPA.

In addition to Class I and Class III inventories, construction activities in areas where the BLM believes there is a high potential for buried cultural deposits may be monitored by a BLM-permitted archaeologist. If historic or prehistoric materials are discovered on public land by Dudley or its contractors during construction, further surface-disturbing activities at the site (in an area defined by the BLM) would cease immediately, and the BLM would be notified by Dudley to assure proper handling of the discovery by qualified archaeologists. An evaluation would be made by the BLM to determine appropriate actions to prevent the loss of significant cultural resources. Dudley may be responsible for the cost of site evaluation and mitigation; any decision as to proper mitigation (e.g., data recovery) would be made by the BLM after consulting the SHPO, the Advisory Council on Historic Preservation as appropriate, and Dudley.

The BLM would require that all field personnel be informed by Dudley of the importance of cultural resources and the regulatory obligations to protect such resources. Any cultural resource (historic or prehistoric site or object) discovered on public land by Dudley or any person working on their behalf would be immediately reported to the BLM. The BLM would require Dudley to instruct field personnel not to disturb cultural resource sites or collect artifacts and that disturbance and collection of cultural materials from public land is prohibited and against the law.

4.6.3 Visual Resources Mitigation

The BLM may require the relocation of project facilities to avoid potential visual resource impacts within the VRM Class II area, which in some instances may require the use of centralized processing facilities. The BLM may also require power lines be buried in Class II areas or that overhead power lines and power line features (e.g., lines, insulators, poles) be non-reflective, sandblasted, and/or nonreflectively painted to a color that blends with the environment. The BLM may require painting of facilities using a custom-mixed paint rather than using a standard environmental color so that facilities do not attract attention in Class II areas. In all cases, the BLM will require the minimization of disturbance in VRM Class II areas. Additionally, and in all areas, the BLM may require that topsoil stockpiles be placed at locations to screen well pad and other facilities from Seminoe Road, and that contours be rounded to blend with the natural environment and not attract a viewer's attention.

4.7.3 Hazardous Materials Mitigation

If hazardous materials are present within fracturing fluids, the BLM may deny the discharge of these fluids to reserve pits.

APPENDIX E

UNITED STATES FISH AND WILDLIFE SERVICE
FINAL CONFERENCE OPINION
FOR THE
SEMINOE ROAD COALBED METHANE PILOT PROJECT, CARBON COUNTY, WYOMING

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Ecological Services
4000 Airport Parkway
Cheyenne, Wyoming 82001

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ES-61411
pd/W.02/wy4475.pd

May 08, 2001

Memorandum

To: Kurt Kotter, Field Manager, Rawlins Field Office, Bureau of Land Management, Rawlins, Wyoming

From: Mike Long, Field Supervisor, Ecological Services, Cheyenne, Wyoming

Subject: Final Conference Opinion for the Seminoe Road Coalbed Methane Pilot Project, Carbon County, Wyoming

This document transmits the Fish and Wildlife Service's (Service) conference opinion based on our review of the Seminoe Road Coalbed Methane Pilot Project in Carbon County, Wyoming, and its effects on the proposed mountain plover (*Charadrius montanus*) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Your December 2000 Seminoe Road Coalbed Methane Pilot Project Biological Assessment (Assessment) and request for formal conferencing was received on December 18, 2000.

This conference opinion is based on information provided in the December 2000 Assessment; letters from your office dated December 15, 2000 and February 22, 2001 regarding North Platte River depletions and black-footed ferrets, respectively; a meeting between your staff and the wildlife consultant on August 16, 2000; and several phone conversations (June 6, July 5, July 17, August 29, September 21, October 2, October 5, November 16, November 17, December 12, and December 15, 2000, January 02, January 22, February 9, February 12, 2001) between Frank Blomquist of the Bureau of Land Management's (Bureau) Rawlins Field Office and Pat Deibert of my staff. A complete administrative record of this consultation is on file at the Service's Wyoming Field Office, Cheyenne, Wyoming.

We concur with your determinations that the proposed action is likely to adversely affect the proposed mountain plover. We also concur with your determination that the action is not likely to adversely affect the black-footed ferret (*Mustela nigripes*), blowout penstemon (*Penstemon haydenii*) and bald eagle (*Haliaeetus leucocephalus*). This concurrence is based upon the Bureau's commitments to conduct ferret surveys in suitable habitat within one-year prior to disturbance, allow no disturbance within prairie dog colonies that are found to be inhabited by black-footed ferrets, negative survey results for black-footed ferrets in 2000, the lack of suitable habitat for blowout penstemon within the project area, and the absence of any active bald eagle nest or roost within 1-mile of project area. We also concur that this project will not adversely affect any Platte River species in Nebraska, (whooping crane, *Grus americana;* interior least tern, *Sterna antillarum*; piping plover, *Charadrius melodus*; pallid sturgeon, *Scaphirhynchus albus*; bald eagle; eskimo curlew, *Numenius borealis*; and western prairie fringed orchid, *Platanthera praeclara*) through depletions since radio-carbon dating of the groundwater indicates a lack of exchange with surface waters of the North Platte River.

Conference History
Informal consultation on this project began with the Bureau's verbal request for a species list on June 6, 2000. Formal conferencing was initiated on December 15, 2000, after several discussions between Service and Bureau staff indicated an adverse effect to nesting mountain plover may be likely.

CONFERENCE OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Bureau has not completed National Environmental Policy Act (NEPA) analysis for the proposed project. There are two alternatives proposed, the one described above and no action. This conference opinion is only valid for the action alternative described in the Bureau's biological assessment.

The Seminoe Road Coalbed Methane Pilot Project is located in Townships 23 and 24 North, Range 85 West, Carbon County, Wyoming, near Seminoe Reservoir. The pilot project will allow drilling, completing and producing 18 coalbed methane wells, plus two alternate wells and a monitoring well, to determine the potential of the area for commercial methane production. The project area includes 8,200 acres, of which 3,780 acres are federal surface and mineral estate. Approximately eight wells and associated facilities will be drilled on Federal surface. The remaining wells will require Bureau right-of-way permits for access and transmission corridors.

Production well spacing will be four wells per section. Approximately 12 days will be necessary to drill each well, and set a pump with a completion rig. Each well will require an access road, a water discharge line, a gas gathering line and a power line. Withdrawn groundwater will be transported from each well, via a pipeline, to an ephemeral draw that discharges into Seminoe Reservoir. Total direct project disturbance is estimated at 146 acres for the wells, access roads and other associated facilities. If commercial development is proposed as a result of the findings from this pilot project, additional development plans, including environmental analyses, and section 7 compliance will be necessary.

The Service has determined the action area to include the project area, any associated transportation corridors, and any adjacent areas that provide habitat for nesting mountain plovers. Well drilling will begin immediately on Federal surface. Each well will be continuously tested for

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6 to 12 months to evaluate the feasibility of developing the area commercially. If the area is non-productive, or economically unfeasible, the areas affected will be reclaimed to Bureau, or private landowner standards.

Conservation Measures

The Bureau has addressed some of the direct and indirect impacts of the project to listed and proposed species, as well as the habitats for these species by incorporating mitigation measures into the proposed project (taken from the Biological Assessment). These measures are as follows:

All Species

- To ensure construction activities occur commensurate with identified mitigation, Dudley would have a Bureau-approved biologist on site during construction as deemed appropriate by the Bureau, and as identified during supplemental permit processing (APD's, ROW's, etc.)

- Pipelines, roads, well pads and ancillary facilities would be located and designed to minimize disturbance to areas of high wildlife habitat value (e.g. prairie dog colonies, areas of suitable mountain plover habitat, sage grouse leks, cushion plant communities [i.e. mountain plover nesting habitat], playa lakes, wetlands, and riparian areas).

- Areas with high erosion potential and/or rugged topography (steep slopes, stabilized sand dunes, floodplains, unstable soil) would be avoided, where practical.

- Removal or disturbance of vegetation would be minimized through construction site management (e.g. by utilizing previously disturbed areas, using existing right-of-ways, designating limited equipment/materials storage yards and staging areas, scalping), and Dudley would develop and implement detailed reclamation specifications including stabilizing and revegetating disturbed areas to minimize impacts from project-related activities.

- To minimize wildlife mortality due to vehicle collisions, Dudley would advise project personnel regarding appropriate speed limits on designated access roads as identified by the Bureau. Potential increases in poaching would be minimized through employee and contractor education regarding wildlife laws. If violations are discovered, the offending employee or contractor would be disciplined and may be dismissed by Dudley and/or prosecuted by the Wyoming Game and Fish Department and/or Service.

- Areas potentially hazardous to wildlife (e.g. reserve pits, evaporation pits, hazardous material storage areas) would be adequately protected (e.g. fences, netted) to prevent access by wildlife and ensure protection of migratory birds and other wildlife as deemed necessary by the Bureau.

- Firearms and dogs would not be allowed on-site by project employees. Dudley would enforce existing drug, alcohol, and firearms policies.

- To protect plant populations and wildlife habitat, project-related travel would be restricted to designated access roads - no off-road travel would be allowed except in emergencies.

- Wildlife-proof fencing would be utilized on reclaimed areas if it is determined that wildlife species and/or livestock are impeding successful vegetation establishment.

- Potential impacts to fisheries would be minimized by using proper erosion control techniques (e.g. water bard, jute netting, rip-rap, mulch), and adherence to the water management plan. Construction within 500 ft. of open water and 100 ft. of intermittent or ephemeral channels would be avoided unless otherwise authorized by the Bureau. Channel crossings requiring trenching would be constructed when flows are not expected (late summer or fall). All necessary crossings would be constructed nearly perpendicular (at right angles) to flow.

- Dudley would finance site -specific surveys for threatened, endangered, proposed and candidate (TEP&C) and other sensitive plant species (e.g., Blowout [Hayden's] penstemon) prior to any surface disturbance occurring after October 15, 2000, in areas determined by the Bureau to contain potential habitat for such species. These surveys would be completed by a qualified botanist as authorized by the Bureau, and this botanist would be subject to Bureau's special status plant survey policy requirements. Data from these surveys would be provided to the Bureau, and if any sensitive plant species are found they would be avoided or if their habitats are found Bureau/Service recommendations for avoidance or mitigation would be implemented. Project facilities would be relocated to avoid TEP&C and other sensitive plant species and/or their habitat.

- Herbicide applications would be prohibited within 500 ft. of known sensitive plant populations.

- Site-specific surveys for TEP&C (e.g., black-footed ferret, mountain plover) and other sensitive animal species would be conducted prior to surface disturbance in areas determined by the Bureau to contain potential habitat for such species pursuant to the Bureau's Directive and Bureau regulation 6840. These surveys would be completed by the Bureau and/or a Bureau-authorized biologist prior to disturbance occurring after October 15, 2000. Surveys would focus on those TEP&C species known to occur on the project area, as well as those potentially occurring in the area. If TEP&C or other sensitive animal species are found on the area, construction activities would be delayed, the Bureau and Service would be notified, and appropriate avoidance and/or protection measures would be implemented as determined necessary during conferencing and consultation. Habitats where TEP&C and other sensitive animal species are found or are likely to occur would be avoided, where practical, through relocation of project facilities.

Mountain Plover:

- Operators and contractors would be shown how to identify mountain plover and provided information about its habitat requirements, natural history, status, threats, and possible impacts of gas development activities. Incidental observations of mountain plovers would be solicited from all field personnel.

- During the spring/summer of 2000, Operators financed a Bureau-approved biologist to implement habitat/community type mapping actions on the project area to identify mountain plover concentration areas (i.e., areas where broods and/or adults have been observed in the current year or documented in at least 2 of the last 3 years). Suitable habitat identification included areas with vegetation less than 4 inches in height and/or active prairie dog towns.

- During the period of May 1-June 15 throughout the 5-year life-of-project (LOP) unless otherwise approved by the Service, mountain plover surveys would be conducted by an Operator-financed, Bureau-approved biologist in accordance with existing or revised Service guidelines.

- If an active nest and/or mountain plover are found within 200 m of proposed features, informal conferencing would occur with the Service.

- If an active nest is found in the survey area, planned activities would be delayed 37 days, or 1 week post-hatching, or if a brood of flightless chicks is observed, activities would be delayed at least 7 days.

- Where access roads and/or well locations have been constructed prior to the mountain plover nesting season (April 10 - July 10) and use of these areas has not been initiated for development actions prior to April 10, a Bureau-approved biologist would conduct surveys of these disturbed areas prior to use to determine whether mountain plover are present. In the event plover nesting is occurring, Operators would delay development activities until nesting is complete.

- During the LOP, unless otherwise approved by the Service, mountain plover nest density, success, and productivity within the project area would be monitored by an Operator-financed, Bureau-approved biologist. Reports will be submitted to the Bureau and Service's Wyoming Field Office annually.

- Construction of ancillary facilities (e.g., compressor stations, processing plants) would be avoided within 0.25 mi of known mountain plover concentration areas, where practical.

- If nesting habitat is disturbed, these disturbed areas would be reclaimed to approximate original conditions (topography, vegetation, hydrology, etc.) after completion of activities in the area, in part to ensure suitable mountain plover breeding habitats are present on the

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reclaimed landscape. Seed mixes and application rates for reclamation would produce stands of vegetation suitable for plover nesting in suitable plover habitat, while meeting the Bureau's requirements for stabilizing soil and controlling weeds. Seed mixes and application rates for reclamation would be designed to produce stands of sparse, low-growing vegetation suitable for plover nesting in previously suitable mountain plover habitat. Reclamation would attempt to return the plant community to the pre-existing condition as soon as possible.

- To minimize destruction of nests and disturbance to breeding plovers from construction and reclamation activities, grading, seeding, or other ground-disturbing activities would not occur from April 10 to July 10 unless surveys within 200 m of project facilities consistent with Service approved methods find that no plovers are nesting in the area.

- Because adults and broods may forage along roads, particularly at night (one-half hour after sunset to one-half hour before sunrise), traffic speed and volume would be limited during the breeding season (April 10 - July 10) in identified plover habitat, where practical. Wherever possible, road construction through plover habitat would be avoided. Within 0.25 mi of identified concentration areas, speed limits would be posted at 25 mph on resources roads, and 35 mph on local roads during the brood rearing period (June 1 - July 10), where practical. Traffic would be minimized by car-pooling and organizing work activities to limit trips on roads within 0.25 mi of known plover concentration areas between June 1 and July 10, where practical.

- Project-related features that increase the population levels or hunting efficiency of predators of the mountain plover would be limited. Creation of hunting perches or nest sites for avian predators within 0.25 mi of identified concentration areas would be avoided where practicable by including perch-inhibitors in their design, and by using the lowest practicable structures for fences and other elevated structures, where necessary. Road-killed animals would be promptly removed from areas within 0.25 mi of identified concentration areas to avoid attracting avian and mammalian predators and supplementing their natural food supplies.

- Plugged and abandoned wells within 0.25 mi of nesting aggregation areas would be identified with markers 4 ft. tall with perch inhibitors on top to avoid creation of raptor hunting perches. This is the lowest structure in compliance with existing regulatory requirements in the State of Wyoming.

- All suspected observations of mountain plover adults, eggs, chicks, or carcasses on the project area however obtained, would be reported within 24 hours to: Wildlife Biologist, Bureau of Land Management, Frank Blomquist, (307) 328-4207, Rawlins Field Office, P.O. Box 2407, 1300 North Third Street, Rawlins, WY 82301; and Field Supervisor or Designee, U.S. Fish and Wildlife Service, (307) 772-2374, Wyoming Field Office, 4000 Airport Parkway, Cheyenne, WY 82001. Observations would include a description

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including what was seen, time, date, exact location, and observer's name, address, and telephone number. Carcasses or other suspected plover remains would be collected by the Bureau or Service employees and deposited with the Service's Wyoming Field office.

Black-footed Ferret:

- Operators and contractors would be shown how to identify black-footed ferret and their sign and provided information about its habitat requirements, natural history, status, threats, possible impacts of gas development activities, and ways to minimize these impacts.

- All white-tailed prairie dog towns/complexes would be mapped within the project area, and associated burrow densities on potentially affected towns would be determined pursuant to Biggins et al. (1993) or other Bureau and Service approved technique during 2000 and every 3-5 years thereafter to determine whether the criteria established in the Service's (1989) guidelines for black-footed ferret habitat are met.

- If prairie dog towns/complexes suitable as black-footed ferret habitat are present, attempts would be made to locate all project components at least 50 m (164 ft) from these towns/complexes to avoid direct impacts to the towns.

- If suitable prairie dog town/complex avoidance is not possible, surveys of towns/complexes for ferrets, would be conducted in accordance with Service guidelines and requirements. This information would be provided to the Bureau and Service in accordance with Section 7 of the Act, and the Interagency Cooperation Regulations.

- If any black-footed ferrets or their sign are found within a prairie dog town or complex previously determined to be unsuitable for, or free of, ferrets, all previously authorized projected-related activities on-going in such towns or complexes would be suspended immediately and Section 7 consultation re-initiated with the Service.

- Operators and contractors would prohibit dogs from the project area by project employees.

- Observations of black-footed ferrets, their sign, or carcasses would be reported within 24 hours to the Bureau's Rawlins Field Office and the Service.

- All suspected observations of black-footed ferrets, their sign, or carcasses on the project area and the location of the suspected observation however obtained, would be reported within 24 hours to: Wildlife Biologist, Bureau of Land Management, Frank Blomquist, (307) 328-4207, Rawlins Field Office, P.O. Box 2407, 1300 North Third Street, Rawlins, WY 82301; and Field Supervisor or Designee, U.S. Fish and Wildlife Service, (307) 772-2374, Wyoming Field Office, 4000 Airport Parkway, Cheyenne, WY 82001. Observations would include a description including what was seen, time, date, exact

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location, and observer's name, address, and telephone number. Carcasses or other suspected ferret remains would be collected by the Bureau or Service employees and deposited with the Service's Wyoming Field office.

Swift Fox:

- If a swift fox (*Vulpes velox*) den is encountered during construction or other development activities, potentially disruptive actions to denning swift fox as identified by the Bureau would not occur from March 1 to July 31 to protect denning areas.

STATUS OF SPECIES

The mountain plover was proposed for listing as a threatened species on February 16, 1999 (64 F.R. 7587)[1]. The mountain plover is a small bird, about the size of a killdeer (*Charadrius vociferus*) in the plover family (Family *Charadriidae*). The type specimen was collected in 1837 by J. K. Townsend on the Sweetwater River of Wyoming. There are no recognized subspecies.

Description

The mountain plover is a compact bird (about 7-9 inches long) with light brown above and paler underparts, lacking the contrasting dark breast bands typical of many other plover species. In flight, its underwings are white. Breeding plumage differs only by the addition of a dark line between the bill and eyes contrasting with a pale forehead. The bill is black, the legs are gray to light brown-yellow, feet are dark brown, and claws are black. The sexes are alike.

Life History/Habitat Use

The mountain plover is a migratory species of the shortgrass prairie and shrub-steppe eco-regions of the arid West. The universal characteristics of mountain plover habitat on both the breeding and wintering grounds are short vegetation, bare ground, and flat topography. They are found associated with plains, alkali flats, agricultural lands, cultivated lands, sod farms, prairie dog towns, and low shrubs at both breeding and wintering locales. Unlike other plovers, they are rarely associated with water.

Mountain plovers are insectivorous with beetles, grasshoppers, crickets, and ants as their principal food items (Rosenberg et al. 1991).

The nest of the mountain plover is a simple scrape on the ground, which may be lined with debris. Nests are usually placed in areas where vegetation is less than 4 inches in height, the amount of bare ground in the area exceeds 30%, and near a conspicuous object such as a manure pile or rocky area. In shortgrass prairie habitat, vegetation associated with nest sites includes *Bouteloua gracilis* (blue grama), *Buchloe dactyloides* (buffalo grass) and *Opuntia* spp. (prickly pear cactus). In shrub-steppe grasslands, vegetation around nests includes low-growing shrubs such as *Artemisia nova* (black sage) and *Atriplex gardneri* (Gardner saltbush) (Day 1994, Knopf 1996). Topography is typically flat or gently rolling. Nesting areas consistently have slopes less than

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12% (Knowles et al. 1982, Parrish 1988, Beauvais and Smith 1999). Generally, "suitable mountain plover habitat" refers to areas containing these characteristics: low relief, vegetation generally less than 4 inches in height, and bare ground present and at least locally exceeding 30% of the area.

The breeding season begins soon after birds arrive in late March or early April. Breeding season displays involve different calls and flight displays, including "falling leaf" and pursuit flights to advertize territory occupancy and define boundaries between territories. Territories in Colorado are about 40 acres, and adjacent territories may overlap significantly along boundaries. Breeding plovers show close site fidelity, often returning to the same territory in subsequent years. Territories tend to be aggregated with several breeding pairs occurring within a few square miles surrounded by empty but apparently suitable habitat (Knopf 1996).

Nests may be initiated 1-2 weeks after arrival on the breeding grounds and the clutch of 3 eggs may take 3-12 days to complete. Incubation lasts approximately 29 days. In Colorado, egg-laying began April 15, continuing through mid-June, with one late nest observed June 23. Adults were found to incubate or attend nests with increasing frequency and duration as the incubation period continued. Nest attendance in Wyoming increased from approximately 50% of daylight hours early in incubation to approximately 100% within days of hatching (Laun 1957). Eggs appear highly resistant to chilling but susceptible to overheating in the sun due to their dark coloration (Knopf 1996).

Chicks leave the nest soon after the last egg hatches. Chicks are usually attended by one adult, brooded about one-third of the time for the first day. Daily movements of the broods may be extensive, with broods ranging over as much as 200 acres between hatch and fledging. Chicks fledge approximately 33 days post-hatch (Knopf 1996).

Known predators of adult mountain plovers are few. Kit fox (*Vulpes macrotis*) and prairie falcon (*Falco mexicanus*) are the only documented predators of adults. However, their ground nests are vulnerable to mammalian predators including the thirteen-lined ground squirrel (*Spermophilus tridecemlineatus*), swift fox, badger (*Taxidea taxus*), and coyote (*Canis latrans*), and possibly corvids (crows (*Corvus brachyrhynchos*), ravens (*Corvus corax*) and magpies (*Pica pica*)). Ground squirrels, coyotes, Swainson's hawks (*Buteo swainsonii*), prairie falcons, and loggerhead shrikes (*Lanius ludovicianus*) have been observed taking flightless young (Knopf 1996).

Species in the shorebird family are generally long-lived, with low annual reproductive rates and small clutch sizes. Available information on the mountain plover conforms to this pattern. Annual survival estimates for this species are unavailable, though over-winter survival is high, estimated at 0.9474 from a sample of 44 birds (Knopf 1996). Few data exist on the life span of the mountain plover, though one banded bird was recovered after 6 years.

Mountain plovers probably start breeding in their second year of life. Normal clutch size is three, very rarely four. Two-egg clutches probably result from predation of individual eggs. Birds are largely monogamous, though the pair bond is only maintained for a short period during breeding. There is some evidence that at least some females lay two clutches, one brooded by the male and the other by the female, with this strategy common in some years (Knopf 1996).

Nest success has been estimated to vary from 26-65% between years and may be influenced by rainfall. Mountain plovers in Weld County, Colorado, fledged an estimated 0.26 and 1.4 young per nest in different studies between 1969 and 1974, though the higher estimate is believed to be biased by the exclusion of nests which totally failed (Knopf 1996).

Distribution

Mountain plovers occupy suitable breeding habitat in many of the Great Plains states from Canada south to Texas from late March through July. Flocks may form as early as mid-June prior to migration to wintering habitats in August through October. Wintering areas are concentrated in the Central Valley of California, Texas and Mexico. There are no wintering areas in Wyoming. Historically, the mountain plover was considered numerous on breeding grounds in western and central Kansas and Oklahoma, western Nebraska and South Dakota, and eastern Colorado, Montana, and Wyoming.

Approximately 1,500 birds are estimated to occur in Wyoming. Birds have been observed during the breeding season over much of the shortgrass prairie of the eastern parts of the State, with high densities reported in the Laramie Plains of northern Albany County and eastern Carbon County (Laun 1957, Johnson et al. 2000), Converse County (Parrish 1988), Laramie County (Graul 1975), Park County (U.S. Bureau of Land Management 1988), and Sweetwater County (Beauvais and Smith 1999).

Status and Threats

The mountain plover was designated a category 2 candidate species on December 30, 1982 (47 F.R. 58458), meaning that the species may be declining but more information was needed. The Service elevated its status to category 1 candidate in the 1994 Animal Candidate Notice of Review (59 F.R. 58982), meaning that listing was warranted, but precluded by higher priority species. In 1996, the Service did away with candidate categories 2 and 3, redefining candidate species to include only former category 1 candidate species (61 F.R. 64481). The mountain plover was retained as a candidate species in the 1997 status review (62 F.R. 49298). The species was petitioned for listing as threatened on July 7, 1997. Due to its candidate status, no 90-day finding was required in response to this petition. On February 16, 1999, the Service gave notice of a proposal to list the mountain plover as a threatened species pursuant to the Act (64 F.R. 7587). A final listing decision on this species is pending.

Endemic grassland birds have declined more rapidly than other bird species, and the mountain plover's decline is greater than the other grassland endemics (Knopf 1994, Sauer et al. 1997). Available data indicate that population numbers of mountain plovers have declined range-wide by more than 50 percent since 1966 to fewer than 10,000 birds. The eastern extent of the range has been greatly reduced, possibly due to conversion of native prairie to cultivated agriculture as well as control of burrowing rodents. Mountain plovers are no longer known to breed in Canada or South Dakota.

Identified or suspected reasons for the decline include conversion of shortgrass and shrub steppe habitats, changes in range management to emphasize uniform grass cover, declines in native ungulates and burrowing animals, oil and gas development and associated road construction, and possibly population sinks created by certain agricultural practices. A population 'sink' (Pulliam 1988) is an area within the breeding range of a species or population where reproduction is not adequate to balance mortality, but population levels are maintained by immigration of breeders produced in a nearby 'source' area.

The mountain plover is currently protected by the Migratory Bird Treaty Act. Therefore, take of this migratory bird is prohibited, **the issuance of this conference opinion notwithstanding.**

ENVIRONMENTAL BASELINE

Vegetation on the project area is primarily desert shrub cover, with some Wyoming big sagebrush steppe. Approximately 2,756 acres of the project area is considered suitable mountain plover nesting habitat (BLM, 2000). Surveys for mountain plovers conducted in 2000 resulted in 29 observations of plovers on the project area, including 5 adult pairs, and 4 observations of adults with chicks. While no courtship displays were observed, breeding and nesting did occur on the project area (BLM, 2000). Mountain plovers are also documented in Carbon County, south of the project area (BLM, 2000).

Re-construction of the Seminoe Road by Carbon County Road and Bridge will occur concurrently with development of the proposed pilot coalbed methane project. The Bureau is conducting an informal conference with the Service for this project. No direct take is anticipated as a result of construction, since all construction will occur outside of the plover breeding season (April 10 through July 10). Predation may increase, as the new right-of-way fence will be constructed, allowing for many new raptor perches. Additionally, traffic may increase. There may also be indirect effects resulting from increased human disturbance.

EFFECTS OF THE ACTION

There will be a direct loss of 49 acres of mountain plover nesting habitat due to proposed project activities. The probability of direct mortality from project-related construction is minimal, given the seasonal restriction placed on construction during the plover nesting season (no construction within 200m of a plover nest from April 10 through July 10; BLM, 2000). If construction cannot be avoided during the nesting period, surveys will be conducted prior to construction. If a nest is located during these surveys within 200 m of the project development, and the development cannot be re-located, the development will be delayed until nesting is complete. Ancillary facilities will be placed a minimum of 0.25 mile from known plover concentration areas (BLM, 2000).

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Mountain plovers are attracted to roads (F. Knopf, U.S. Geological Survey, Biological Resources Division, pers. comm.) and are known to lead broods onto roads to forage at night (Laun 1957, Ellison et al. 1999). Direct loss of chicks or even adults to vehicle collisions may increase where increasing traffic volumes correspond with concentrations of nesting and brood-rearing activity. Because the birds may freeze and squat close to the ground in response to approaching vehicles, some level of mortality is likely. The construction of 10 miles of new roads (BLM, 2000) will likely increase the probability of direct take through vehicle collisions.

Disturbance leading to loss of reproductive potential may occur is several ways. Effects to nesting plovers will depend on the onset, duration, and frequency of human disturbance. Human disturbance may cause direct loss of eggs or chicks if attending mountain plover adults are displaced long enough to expose the eggs or chicks to excessive heating, chilling, or predation. Although no construction activities are permitted within 200 m of a known nest, project-related actions in adjacent habitats may still result in sufficient disturbance to cause nest loss. Additionally, there is a chance for the loss of undetected nests.

Project-related activities may also preclude the use of some of the project area by nesting mountain plovers. While this may reduce the amount of nest failure from disturbance, it may nonetheless result in reduced plover reproduction if plovers are displaced to less suitable, or unsuitable nesting areas. Significant amounts of previously occupied habitat may be made unavailable in this way. Preliminary data from the Foote Creek Rim suggest that breeding plovers may be displaced from areas of high human activity (WEST, Inc. 1999). If birds are displaced to nest in less suitable habitats, resulting in lower nesting success, this would be considered a loss in breeding potential.

Human disturbance is especially problematic where human activity has created disturbed areas attractive to nesting mountain plovers. In Utah, mountain plovers have been found to nest as close as 6 meters from open roads or operating oil well pads (Ellison et al. 1999), presumably attracted by the abundance of bare soil. Creation of apparently suitable habitat with high levels of human disturbance may actually attract breeding plovers to an 'ecological trap' (Pulliam 1988) where nests are initiated but fail due to disturbance and reproductive effort is wasted.

Nest loss from flooding by the discharge of produced water is not anticipated since the water will be piped off-site and discharged into unsuitable plover habitat (P. Guernsey, 2001, TRC Mariah, pers. comm.). Similarly, loss of nesting habitat from vegetation changes within suitable plover nesting habitat, resulting from increased water availability, is not anticipated.

In addition to activities potentially resulting in direct mortality of adults or young, and reduced production, several factors may lead to indirect mortality. The eggs and young, and to a lesser extent adults, are susceptible to a number of avian and mammalian predators. These include corvids (ravens, magpies, crows), birds of prey (hawks and owls), coyotes, badgers, weasels (*Mustela* spp.), and foxes (*Vulpes* spp.). These predators may benefit from human activities in a number of ways. Power poles, fence posts, associated gas facilities, and other elevated structures may provide new hunting perches and nest sites for avian predators, increasing their hunting effectiveness and range. Buildings, trailers, and other permanent structures may provide safe den sites for mammalian predators. Research on the more well-studied sage grouse (*Centrocercus urophasianus*) has demonstrated that birds avoid elevated perch sites, including powerlines and fence posts by as much as ½ mile (Braun 1998). Mountain plover adults, chicks, and eggs live in the same environment and are prey for some of the same predators. Therefore these structures may adversely affect their habitat and behavior similarly.

An increase in road-killed animals due to more roads and heavier traffic may provide an increased food supply for both avian and mammalian predators, most of which are also scavengers. This increased food source may increase predator population size and may also extend their range into previously uninhabited areas, leading to higher rates of predation on mountain plover eggs, chicks, and even adults. Such an ecological relationship has been demonstrated in the Mojave Desert of California. Increases in roads and traffic have extended the range of avian predators (common raven and red-tailed hawk) exposing young desert tortoises (*Gopherus agassizii*) to much higher rates of predation than before development (Knight et al. 1993, Knight and Kawashima 1993)).

Mountain plovers show high site fidelity to breeding territories between years and the persistence of breeding concentrations may be more important than mere availability of apparently suitable habitat for the persistence of the mountain plover. The necessity of social facilitation for effective breeding has been demonstrated in a number of avian species. Habitat degradation occurring outside of the breeding season may cause take in the form of harm by causing abandonment of historically used breeding areas, though no direct take of plovers, eggs, or chicks occurs. Harm would result if removal or degradation of nesting habitat on historically used sites resulted in loss of breeding capability upon the birds' return, and/or resulted in loss of the pair for lack of available feeding or nesting habitat. Development activities, including construction of roads, well pads, and ancillary facilities that degrade habitat in historically used breeding areas could have this effect, whether or not they occur during the breeding season. Human activity associated with project development and operation in historically used breeding areas may harass nesting birds enough to cause them to abandon the breeding area, particularly if disturbance extends over more than one breeding season. Again, this could constitute take.

The key issue is whether or not birds displaced by project activities will move to new areas and successfully breed. Currently, information is inadequate to answer this question. While unoccupied areas meeting our understanding of suitable habitat exist, this could mean either that science has not accurately described suitable plover breeding habitat and these areas are not actually suitable, or that they are suitable and the mountain plover is currently not limited by availability of breeding habitat. Until the question is resolved the prudent management approach must be to identify and protect all breeding concentrations of the species.

Specific phases of gas development and the specific activities that may cause take are outlined below.

Development: Given the Bureau's existing commitment to survey for plovers and delay work either 37 days, or 7 days post-hatch if any mountain plover nests or broods are found within 200m of development, the likelihood of ground-disturbing activities (including construction of roads, well pads, pipelines, ancillary facilities) causing direct lethal take of plovers is discountable. However, increased traffic to and from other project construction sites may cause direct take through collisions with vehicles, and indirectly cause take by increasing predator numbers (by providing road-killed animals), thereby possibly increasing predation on adults, eggs, or chicks.

Drilling operations may displace breeding mountain plovers, behaviorially restricting the amount of available nesting habitat around the drill rig, and may constitute harassment. Traffic and risks of vehicle collision will greatly increase during drilling. Any of these factors that incrementally reduce the habitat quality leading to abandonment of a previously used breeding area, or reduced reproductive success, may constitute take in the form of harm.

Operation: Though traffic may decrease after construction, operating wells will still require periodic maintenance and visits, thereby maintaining low levels of impact associated with traffic and human activity. Elevated structures on the well pad could provide new nest and perch sites for corvids (i.e., common raven and black-billed magpie) and birds of prey, including ferruginous hawks (*Buteo regalis*), golden eagles (*Aquila chrysaetos*), great horned owls (*Bubo virginianus*), and loggerhead shrikes. Presence of these known or suspected predators of mountain plovers and their eggs and chicks will increase the likelihood of predation. Maintenance of producing wells during the breeding season will occasionally produce levels of traffic, noise, and human activities that could lead to direct take of mountain plovers or displacement from the vicinity of the well pad. Recreational use of the new road system will cause increased disturbance and risk of vehicle collisions. Any of these factors that incrementally reduce the habitat quality leading to abandonment of a previously used breeding area or reduced reproductive success would constitute take in the form of harm. Mortality caused by vehicle collisions would constitute direct take.

Abandonment and Reclamation: Reclamation of drill pads, roads, and pipelines will involve an increase in traffic, noise, and human activity from operation-level activities, possibly leading to take as well as disturbance and displacement of nesting plovers in the area. Reclamation activities initiated during the breeding season, unless adequate surveys determine no birds are present, may crush eggs or chicks or lead to nest failure by displacing attendant adults. Placement of a marker to identify plugged wells may provide a permanent hunting perch for avian predators, increasing mortality risk to mountain plovers or displacing breeding birds from suitable habitat. Reclamation with plant species that produce a long-lasting stand of tall, dense vegetation will preclude nesting by mountain plovers as long as that vegetation persists.

Inter-related and Inter-dependent Effects: The interspersed surface and mineral ownership on the project area creates challenges for protection of mountain plovers and their habitats. However, the coalbed methane drilling on non-Federal surface and/or minerals for this project would not occur but for a Federal action (i.e., they are inter-related or inter-dependent to the Federal action). Development actions of non-Federal minerals occurring as a result of a Bureau action would have the same effects on nesting plovers or historically used breeding areas as such development of Federal minerals, and are described above.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Currently, the only known projects not associated with a Federal action are the continued development of wind power facilities on private lands, including the expansion of the SeaWest facility on Foote Creek Rim, and development of coalbed methane on private surface/private minerals. The data are not adequate to determine the distribution and abundance of the mountain plover on private lands in the project area, nor are there accurate estimates of suitable habitat for this species on private lands, though such habitat likely occurs throughout the area. While very little information is available for these non-Federal projects, they presumably could contribute to direct removal of nesting habitat for mountain plovers; increased mortality from vehicular collisions; decreased foraging areas and habitat availability; increased probabilities of mortality from the presence of new raptor perching and nesting locations, and road-killed animals; direct nest impacts from discharge of produced water over the land surface; and long-term change in habitat quality through vegetative changes resulting from discharged water over the land surface.

Energy development activities on non-Federal land may require grants of right-of-way from the Bureau for access and are, therefore, inter-related and inter-dependent to the right-of-way grants. These grants and inter-related and inter-dependent actions constitute Federal actions subject to review under section 7 of the Act and therefore are not considered under cumulative effects.

CONCLUSION

After reviewing the current status of the mountain plover; the environmental baseline for the action area; the effects of the coal bed methane development in the project area; and, the cumulative effects, it is the Service's conference opinion that the Seminoe Road Coalbed Methane Drainage Project, as proposed, is not likely to jeopardize the continued existence of the mountain plover. No critical habitat has been proposed for this species, therefore, none will be affected.

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The Service has reached this conclusion by considering the following:

1. Mountain plovers are widely distributed throughout their breeding range, with the current population estimated at 10,000 individuals (U.S. Fish and Wildlife Service 1999). The loss of a few individuals or nests would be a relatively minor impact.

2. Habitat for the plover is present in the project area, but a relatively small area will be affected by development activities.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, would, kill trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The prohibitions against taking the species found in section 9 of the Act do not apply until the species is listed. However, the Service advises the Bureau to consider implementing the following reasonable and prudent measures. If this conference opinion is adopted as a biological opinion following a listing or designation, these measures, with their implementing terms and conditions, will be nondiscretionary, and must be undertaken by the Bureau so that they become binding conditions of any grant or permit issued to the project proponent, as appropriate, for the exemption in section 7(o)(2) to apply.

The Bureau has a continuing duty to regulate the activity covered by this incidental take statement. If the Bureau (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Bureau must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR 402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

The Service anticipates up to 20 mountain plovers (1 adult and 19 chicks) could be taken as a result of this proposed action. The incidental take is expected to be in the form of direct take, and harm through modification of breeding behavior.

Direct lethal take of adult mountain plovers or chicks may occur through vehicle collision. The likelihood of vehicle collision is highest during development but remains elevated through operation and abandonment. Displacement of adults from nests or broods long enough to cause take of eggs or chicks through exposure to the elements or predators may occur, especially if people will be nearby on foot for many hours.

Indirect lethal take, especially of eggs and chicks, may occur through increases in predator abundance due to project features providing increased perch and nest sites around plover nesting areas and increased food sources in the form of carrion caused by vehicle collisions.

Information provided on the distribution and abundance of the mountain plover on the analysis area is not sufficient to quantify the number and density of nesting mountain plovers. These data are proposed for collection by the Bureau during the LOP. Given the current lack of information, it is difficult to determine the extent to which development activities may cause lethal take. Since mountain plovers are extremely precocious and will leave the nest within hours of hatch, direct mortality as a result of project construction is not anticipated given the Bureau's commitments to avoid nests during the breeding season. However, given the number of plovers observed in 2000 (29) in close proximity to project roads, the Service anticipates some direct mortality as a result of collision with vehicles. The level of expected mortality is one adult and three chicks (one brood) as a result of vehicular collision while the adult and chicks are foraging along the roads. This take is expected during the construction of the project due to increased traffic during this time period.

Displacement of breeding birds from known nesting areas to less suitable nesting habitat may occur due to habitat alteration and cause harm through reproductive failure. Human activity associated with project development and ongoing operation may also cause displacement and could cause take in the form of harassment. Where development increases predator abundance or hunting efficiency, nesting plovers may be displaced to nest in less suitable habitat. Abandonment of previously occupied breeding aggregation areas due to habitat degradation may result. Loss of such a formerly used site would constitute take in the form of harm or harassment and must be anticipated.

Data on the current distribution on and use of the analysis area by breeding mountain plovers are sparse and inadequate to reasonably estimate potential project impacts. Given this lack of information, it is extremely difficult to determine the extent to which development activities may cause take through harm or harassment, including nest abandonment and displacement to less suitable nesting habitat. Therefore, take of this kind is unquantifiable at this time. However, given the commitment to survey for nests within 200 m of a well (in suitable habitat), and the subsequent restriction of delaying work until completion of nesting, most take via harm and harassment will likely be avoided.

An increase in the number of mountain plover predators as a result of increased perching locations, or a shift in the predator community composition as a result of human activity (e.g. a shift from coyotes to red foxes) is likely to result in increased predation rates. However, without baseline information on predator populations and mountain plover recruitment, it is impossible to determine the extent to which predation resulting from development activities may cause take. Therefore the amount of such take cannot be quantified at this time.

EFFECT OF THE TAKE

After reviewing the current status of mountain plover, the environmental baseline for the action area, the effects of the proposed Seminoe Road Coalbed Methane Pilot Project and the cumulative effects, it is the Service's conference opinion that the Seminoe Road Coalbed Methane Pilot Project is not likely to jeopardize the continued existence of the proposed mountain plover and is not likely to destroy or adversely modify proposed critical habitat.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of mountain plovers. The prohibitions against taking the species found in section 9 of the Act do not apply until the species is listed. However, the Service advises the Bureau to consider implementing the following reasonable and prudent measures. If this conference opinion for the mountain plover is adopted as a biological opinion following a listing or designation, these measures, with their implementing terms and conditions, will be nondiscretionary.

- The Bureau shall ensure implementation of all conservation measures identified and committed to as part of the action (outlined above in Project Description and more fully described throughout the Biological Assessment).

- The Bureau shall ensure direct habitat disturbance does not exceed that discussed in the Biological Assessment and Record of Decision and evaluated in this Conference Opinion. Through minimization and monitoring of direct habitat disturbance, indirect disturbance to the species will also be minimized.

- The Bureau shall locate nesting areas and prevent direct take and minimize indirect take within them.

- The Bureau shall work to avoid abandonment of nesting areas.

- The Bureau shall reduce the possibility of vehicular collisions with mountain plovers.

- The Bureau shall limit project-related features that increase the population levels or hunting efficiency of predators of the mountain plover in the vicinity of known plover nest sites.

- Operators and Bureau employees shall be shown how to identify the mountain plover and provided information about its habitat requirements, natural history, status, threats, and possible impacts of gas development activities. Incidental observations of mountain plovers shall be solicited from all operator and Bureau field personnel.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act if the mountain plover is listed, the Bureau must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. If this conference opinion is adopted as a biological opinion following a listing or designation, these terms and conditions are nondiscretionary.

- In the event that a mountain plover (dead or injured) is located during construction and operation, the Service's Wyoming Field Office (307-772-2374) and the Service's Law Enforcement Office (307-261-6365) will be notified within 24 hours. Because of difficulty in identification, all small birds found dead should be stored in a freezer for the Service to identify.

- The Bureau shall monitor all loss of mountain plover habitat associated with the proposed project. The actual measurement of disturbed habitat can be the responsibility of the Bureau's agent (consultant, contractor, etc.) with a written summary provided to the Service's Wyoming Field Office upon project completion, or immediately if the anticipated impact area is exceeded.

- The Bureau shall require implementation of the conservation measures/mitigation measures for mountain plover identified in the Biological Assessment prepared for the project and dated November 2000. The Bureau shall monitor for compliance with the measures.

- Surveys for mountain plovers will be conducted if ground disturbing activities are anticipated to occur between April 10 and July 10. Surveys should be conducted in compliance with the Service's Mountain Plover Survey Guidelines (attached).

- To minimize the potential increase in raptor predation on mountain plovers, all new power poles constructed for the project shall have raptor perch inhibiting features to prevent raptors from using the poles.
- To minimize the potential of direct take resulting from vehicular collision, speed limits on roads constructed specifically for this project will be limited to 35 mph. The enforcement of the speed limits can be the responsibility of the Bureau's agent (consultant, contractor, etc.).
- If possible, work schedules and shift changes should be set to avoid the periods from ½-hour before to ½-hour after sunrise and sunset during June and July, when mountain plovers and other wildlife are most active, to minimize the chance of mortality from vehicular collisions.
- If an active nest is found within 200 m of any new project-related activities, including construction, all project-related activities shall be delayed until for 37 days, or 7 days post-hatch.
- To minimize the attraction of predators to the project area, all food-related and personal garbage shall be removed from the project area on a daily basis.
- Should any data collected at the project site indicate that take, from predation or harm and harassment as a result of the project, is negatively affecting the local population of mountain plovers, conferencing must be re-initiated immediately.
- Operators and the Bureau shall be provided by the Service with educational material illustrating and describing the mountain plover, its habitat needs, life history, threats, and gas development activities that may lead to incidental take of eggs, chicks, or adults with requirements that these material be posted in common areas and circulated in a memorandum among all employees and service providers.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring re-initiation of conferencing and review of the reasonable and prudent measures provided. The Bureau must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

CONSERVATION RECOMMENDATIONS

Data on the current distribution on and use of the analysis area by breeding mountain plovers are sparse and inadequate to reasonably estimate potential project impacts. Furthermore, actual site-specific details of development activities are not provided in the project description. Given this lack of information, it is impossible to determine the extent to which development activities may cause take through harm or harassment, therefore the amount of such take cannot be quantified at this time. Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- Research to better understand the effects of coalbed methane development on breeding mountain plovers should be conducted. The focus of research should be to measure recruitment to the fall population, philopatry, and site fidelity between developed and undeveloped mountain plover breeding concentration areas on or near the project area. This effort would require close monitoring of a large sample of breeding adults, and possibly color-marking or radio-marking adults and juveniles.

- Research to determine the composition and abundance of predators on and near the project area should be conducted. This research should identify current predator statistics (species, numbers, densities, etc.), common prey items, and fluctuations of predator abundance. Should the pilot project indicate full-field development is feasible, the research should continue to identify any shifts in predator community composition and abundance. This research should emphasize analyses that allow assessment of potential impacts to mountain plover from changes in predator communities and abundance, if any.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal conferencing on the actions outlined in the December 2000 Biological Assessment regarding the Seminoe Road CoalBed Methane Pilot Project in Carbon County, Wyoming. As provided in 50 CFR §402.16, re-initiation of formal consultation/conferencing is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending re-initiation.

You may ask the Service to confirm the conference opinion as a biological opinion issued through formal consultation if the mountain plover is listed. The request must be in writing. If the Service reviews the proposed action and finds that there have been no significant changes in the action as planned or in the information used during the conference, the Service will confirm the conference opinion as the biological opinion on the project and no further section 7 consultation will be necessary.

After listing of the mountain plover as endangered or threatened and any subsequent adoption of this conference opinion, the Bureau shall request re-initiation of consultation if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect the species or critical habitat in a manner or to an extent not considered in this conference opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the species or critical habitat that was not considered in this conference opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

The incidental take statement provided in this conference opinion does not become effective until the species is listed and the conference opinion is adopted as the biological opinion issued through formal consultation. At that time, the project will be reviewed to determine whether any take of the mountain plover has occurred. Modifications of the opinion and incidental take statement may be appropriate to reflect that take. No take of the mountain plover may occur between the listing of the mountain plover and the adoption of the conference opinion through formal consultation, or the completion of a subsequent formal consultation.

Thank you for your assistance in the conservation of endangered, threatened, and proposed species. If you have any questions or comments on this biological opinion, please contact Pat Deibert at the letterhead address or by phone at (307) 772-2374, extension 26.

Attachment

cc: Statewide Habitat Protection, WGFD, Cheyenne, WY
Non-game Coordinator, WGFD, Lander, WY
Jeff Carroll, BLM, Cheyenne, WY
Field Supervisor, FWS, Grand Junction, CO
Field Supervisor, FWS, Helena, MT (Attn: Lou Hanebury)

Kurt Kotter Field Manager, Rawlins Field Office, Bureau of Land Management 23

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APPENDIX F

STANDARD SEED MIXTURES
RAWLINS FIELD OFFICE

APPENDIX F

STANDARD SEED MIXTURES
RAWLINS FIELD OFFICE

DRY LOAMY/SANDY SITES - *characterized as a sagebrush/wheatgrass community with less that 12 inches precipitation*

Species of Seed	Variety	Lbs. PLS**
Grasses		
Thickspike wheatgrass (*Agropyron dasystachyum*)	Critana	4
Western wheatgrass (*Agropyron smithii*)	Rosana	2
Indian ricegrass (*Oryzopsis hymenoides*)		2
Needleandthread (*Stipa comata*)		2
*Bottlebrush squirreltail (*Sitanion hystrix*)		2
*Slender wheatgrass (*Agropyron trachycaulum*)		2
*Sand dropseed (*Sporobulus cryptandrus*)		0.5
Shrubs		
*Rubber rabbitbrush (*Chrysothamnus nauseosus*)		1
*Big sagebrush (*Artemesia tridentata wyomingensis*)		0.5
*Gardner's saltbush (*Atriplex gardneri*)		1
*Shadscale (*Atriplex confertifolia*)		1
*Fourwing saltbush (*Atriplex canescens*)		1
*Antelope bitterbrush (*Purshia tridentata*)		1
*Common winterfat (*Ceratoides lanata*)		1
Forbs		
*Scarlet globemallow (*Sphaeralcea coccinea*)		1
*Lewis' flax (*Linum lewsii*)	Appar	1

LOAMY SITES - *characterized as a sagebrush/wheatgrass community with greater than 12 inches of precipitation*

Species of Seed	Variety	Lbs. PLS**
Grasses		
Western wheatgrass (*Agropyron smithii*)	Rosana	4
Thickspike wheatgrass (*Agropyron dasystachyum*)	Critana	2
Indian ricegrass (*Oryzopsis hymenoides*)		2
Green needlegrass (*Stipa viridula*)		2
*Bluebunch wheatgrass (*Agropyron spicatum*)		2
*Bottlebrush squirreltail (*Sitanion hystrix*)		2
*Slender wheatgrass (*Agropyron trachycaulum*)		2
*Basin wildrye (*Elymus cinerus*)		2

Species of Seed	**Variety**	**Lbs. PLS****
Shrubs		
*Rubber rabbitbrush (*Chrysothamnus nauseosus*)		1
*Big sagebrush (*Artemesia tridentata wyomingensis*)		0.5
*Shadscale (*Atriplex confertifolia*)		1
*Fourwing saltbush (*Atriplex canescens*)		1
*Antelope bitterbrush (*Purshia tridentata*)		1
*Common winterfat (*Ceratoides lanata*)		1
Forbs		
*Lewis' flax (*Linum lewsii*)	Appar	1
*Scarlet globemallow (*Sphaeralcea coccinea*)		1

DRY ALKALINE/SALINE SITES - *characterized as a greasewood, gardner's saltbush, and/or shadscale community*

Species of seed	**Variety**	**Lbs. PLS****
Grasses		
Western wheatgrass (*Agropyron smithii*)	Rosana	4
Slender wheatgrass (*Agropyron trachycaulum*)		2
Bottlebrush squirreltail (*Sitanion hystrix*)		2
Indian ricegrass (*Oryzopsis hymenoides*)		2
*Bluebunch wheatgrass (*Agropyron spicatum*)		2
*Thickspike wheatgrass (*Agropyron dasystachyum*)		2
*Basin wildrye (*Elymus cinerus*)		2
Shrubs		
*Gardner's saltbush (*Atriplex gardneri*)		1
*Common winterfat (*Ceratoides lanata*)		1
*Shadscale (*Atriplex confertifolia*)		1
*Fourwing saltbush (*Atriplex canescens*)		1
*Rubber rabbitbrush (*Chrysothamnus nauseosus*)		1

MOUNTAIN SHRUB SITES - *characterized as shrub community with deep loamy soils and greater than 14 inches of precipitation*

Species of Seed	**Variety**	***Lbs. PLS*****
Grasses		
Bluebunch wheatgrass (*Agropyron spicatum*)		4
Slender wheatgrass (*Agropyron trachycaulum*)		2
Basin wildrye (*Elymus cinerus*)		2
Green needlegrass (*Stipa viridula*)		2
*Western wheatgrass (*Agropyron smithii*)	Rosana	2
*Mountain brome (*Bromus carinatus*)	Bromar	2
*Thickspike wheatgrass (*Agropyron dasystachyum*)		2
*Indian ricegrass (*Oryzopsis hymenoides*)		2

Species of Seed	***Variety***	***Lbs. PLS*****
Shrubs		
*Rubber rabbitbrush (*Chrysothamnus nauseosus*)		1
*Wyoming big sagebrush (*Artemesia tridentata vaseyana*)		0.5
*Antelope bitterbrush (*Purshia tridentata*)		1
*Snowberry (*Symphoricarpus albus*)		1
*Serviceberry (*Amelanchier alnifolia*)		1
Forbs		
*Lewis flax (*Linum lewsii*)	Appar	1

INTRODUCED SPECIES - *Species that are not native, but can adapt to certain habitat types. These species will only be used with BLM approval and when either two attempts at revegetation with native species have been unsuccessful or adjacent vegetation has an established stand of introduced species.*

Crested wheatgrass (*Agropyron cristatum*)
Tall wheatgrass (*Agropyron elongatum*)
Russian wildrye (*Elymus junceus*)
Pubescent wheatgrass (*Agropyron trichophorum*)

Footnotes

Total Lbs. PLS - Seed mixtures should total approximately 8 to 12 lbs. of pure live seed.

** Pure Live Seed, drill seeded For broadcast seeding, double the above rates.

* These species can be used as alternatives, site specific choices, or species required to fulfill a particular value (*e.g., critical wildlife habitat*).

END

02-19-04